

# code of federal regulations

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## Protection of Environment

# 40

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PARTS 61 TO 71

**Revised as of July 1, 1996**

CONTAINING  
A CODIFICATION OF DOCUMENTS  
OF GENERAL APPLICABILITY  
AND FUTURE EFFECT

AS OF JULY 1, 1996

*With Ancillaries*

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*Cite this Code:* CFR

*To cite the regulations in  
this volume use title,  
part and section num-  
ber. Thus, 40 CFR 61.01  
refers to title 40, part  
61, section 01.*

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## Explanation

The Code of Federal Regulations is a codification of the general and permanent rules published in the Federal Register by the Executive departments and agencies of the Federal Government. The Code is divided into 50 titles which represent broad areas subject to Federal regulation. Each title is divided into chapters which usually bear the name of the issuing agency. Each chapter is further subdivided into parts covering specific regulatory areas.

Each volume of the Code is revised at least once each calendar year and issued on a quarterly basis approximately as follows:

|                                |                 |
|--------------------------------|-----------------|
| Title 1 through Title 16.....  | as of January 1 |
| Title 17 through Title 27..... | as of April 1   |
| Title 28 through Title 41..... | as of July 1    |
| Title 42 through Title 50..... | as of October 1 |

The appropriate revision date is printed on the cover of each volume.

### LEGAL STATUS

The contents of the Federal Register are required to be judicially noticed (44 U.S.C. 1507). The Code of Federal Regulations is prima facie evidence of the text of the original documents (44 U.S.C. 1510).

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Each volume of the Code contains amendments published in the Federal Register since the last revision of that volume of the Code. Source citations for the regulations are referred to by volume number and page number of the Federal Register and date of publication. Publication dates and effective dates are usually not the same and care must be exercised by the user in determining the actual effective date. In instances where the effective date is beyond the cut-off date for the Code a note has been inserted to reflect the future effective date. In those instances where a regulation published in the Federal Register states a date certain for expiration, an appropriate note will be inserted following the text.

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The Paperwork Reduction Act of 1980 (Pub. L. 96-511) requires Federal agencies to display an OMB control number with their information collection request.

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#### INCORPORATION BY REFERENCE

*What is incorporation by reference?* Incorporation by reference was established by statute and allows Federal agencies to meet the requirement to publish regulations in the Federal Register by referring to materials already published elsewhere. For an incorporation to be valid, the Director of the Federal Register must approve it. The legal effect of incorporation by reference is that the material is treated as if it were published in full in the Federal Register (5 U.S.C. 552(a)). This material, like any other properly issued regulation, has the force of law.

*What is a proper incorporation by reference?* The Director of the Federal Register will approve an incorporation by reference only when the requirements of 1 CFR part 51 are met. Some of the elements on which approval is based are:

- (a) The incorporation will substantially reduce the volume of material published in the Federal Register.
- (b) The matter incorporated is in fact available to the extent necessary to afford fairness and uniformity in the administrative process.
- (c) The incorporating document is drafted and submitted for publication in accordance with 1 CFR part 51.

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An index to the text of “Title 3—The President” is carried within that volume.

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A List of CFR Sections Affected (LSA) is published monthly, keyed to the revision dates of the 50 CFR titles.

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RICHARD L. CLAYPOOLE,

*Director,*

*Office of the Federal Register.*

*July 1, 1996.*



## THIS TITLE

Title 40—PROTECTION OF ENVIRONMENT is composed of eighteen volumes. The parts in these volumes are arranged in the following order: parts 1–51, part 52, parts 53–59, part 60, parts 61–71, parts 72–80, parts 81–85, part 86, parts 87–135, parts 136–149, parts 150–189, parts 190–259, parts 260–299, parts 300–399, parts 400–424, parts 425–699, parts 700–789 and part 790 to end. The contents of these volumes represent all current regulations codified under this title of the CFR as of July 1, 1996.

Chapter I—Environmental Protection Agency appears in all eighteen volumes. A Pesticide Tolerance Commodity/Chemical Index appears in parts 150–189. A Toxic Substances Chemical—CAS Number Index appears in parts 700–789 and part 790 to end. Redesignation Tables appear in the volumes containing parts 1–51, parts 150–189, and parts 700–789. Regulations issued by the Council on Environmental Quality appear in the volume containing part 790 to end.

The OMB control numbers for title 40 appear in §9.1 of this chapter. For the convenience of the user, §9.1 appears in the Finding Aids section of the volumes containing parts 52 to the end.

For this volume, Ann Elise Maso was Chief Editor. The Code of Federal Regulations publication program is under the direction of Frances D. McDonald, assisted by Alomha S. Morris.

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# Title 40—Protection of Environment

(This book contains parts 61-71)

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# CHAPTER I—ENVIRONMENTAL PROTECTION AGENCY

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APPENDIX E TO PART 61—COMPLIANCE PROCEDURES METHODS FOR DETERMINING COMPLIANCE WITH SUBPART I

AUTHORITY: 42 U.S.C. 7401, 7412, 7414, 7416, 7601.

SOURCE: 38 FR 8826, Apr. 6, 1973, unless otherwise noted.

Subpart A—General Provisions

§61.01 Lists of pollutants and applicability of part 61.

(a) The following list presents the substances that, pursuant to section 112 of the Act, have been designated as hazardous air pollutants. The FEDERAL REGISTER citations and dates refer to the publication in which the listing decision was originally published.

- Asbestos (36 FR 5931; Mar. 31, 1971)
- Benzene (42 FR 29332; June 8, 1977)
- Beryllium (36 FR 5931; Mar. 31, 1971)
- Coke Oven Emissions (49 FR 36560; Sept. 18, 1984)
- Inorganic Arsenic (45 FR 37886; June 5, 1980)
- Mercury (36 FR 5931; Mar. 31, 1971)

- Radionuclides (44 FR 76738; Dec. 27, 1979)
- Vinyl Chloride (40 FR 59532; Dec. 24, 1975)

(b) The following list presents other substances for which a FEDERAL REGISTER notice has been published that included consideration of the serious health effects, including cancer, from ambient air exposure to the substance.

- Acrylonitrile (50 FR 24319; June 10, 1985)
- 1,3-Butadiene (50 FR 41466; Oct. 10, 1985)
- Cadmium (50 FR 42000; Oct. 16, 1985)
- Carbon Tetrachloride (50 FR 32621; Aug. 13, 1985)
- Chlorinated Benzenes (50 FR 32628; Aug. 13, 1985)
- Chlorofluorocarbon—113 (50 FR 24313; June 10, 1985)
- Chloroform (50 FR 39626; Sept. 27, 1985)
- Chloroprene (50 FR 39632; Sept. 27, 1985)
- Chromium (50 FR 24317; June 10, 1985)
- Copper (52 FR 5496; Feb. 23, 1987)
- Epichlorohydrin (50 FR 24575; June 11, 1985)
- Ethylene Dichloride (50 FR 41994; Oct. 16, 1985)
- Ethylene Oxide (50 FR 40286; Oct. 2, 1985)
- Hexachlorocyclopentadiene (50 FR 40154; Oct. 1, 1985)
- Manganese (50 FR 32627; Aug. 13, 1985)
- Methyl Chloroform (50 FR 24314; June 10, 1985)
- Methylene Chloride (50 FR 42037; Oct. 17, 1985)
- Nickel (51 FR 34135; Sept. 25, 1986)
- Perchloroethylene (50 FR 52800; Dec. 26, 1985)
- Phenol (51 FR 22854; June 23, 1986)
- Polycyclic Organic Matter (49 FR 31680; Aug. 8, 1984)
- Toluene (49 FR 22195; May 25, 1984)
- Trichloroethylene (50 FR 52422; Dec. 23, 1985)
- Vinylidene Chloride (50 FR 32632; Aug. 13, 1985)
- Zinc and Zinc Oxide (52 FR 32597, Aug. 28, 1987)

(c) This part applies to the owner or operator of any stationary source for which a standard is prescribed under this part.

(d) In addition to complying with the provisions of this part, the owner or operator of a stationary source subject to a standard in this part may be required to obtain an operating permit issued to stationary sources by an authorized State air pollution control agency or by the Administrator of the U.S. Environmental Protection Agency (EPA) pursuant to title V of the Clean Air Act (Act) as amended November 15,

## Environmental Protection Agency

## § 61.02

1990 (42 U.S.C. 7661). For more information about obtaining an operating permit see part 70 of this chapter.

[50 FR 46290, Nov. 7, 1985, as amended at 51 FR 7715 and 7719, Mar. 5, 1986; 51 FR 11022, Apr. 1, 1986; 52 FR 37617, Oct. 8, 1987; 59 FR 12429, Mar. 16, 1994]

### § 61.02 Definitions.

The terms used in this part are defined in the Act or in this section as follows:

*Act* means the Clean Air Act (42 U.S.C. 7401 *et seq.*).

*Administrator* means the Administrator of the Environmental Protection Agency or his authorized representative.

*Alternative method* means any method of sampling and analyzing for an air pollutant which is not a reference method but which has been demonstrated to the Administrator's satisfaction to produce results adequate for the Administrator's determination of compliance.

*Approved permit program* means a State permit program approved by the Administrator as meeting the requirements of part 70 of this chapter or a Federal permit program established in this chapter pursuant to title V of the Act (42 U.S.C. 7661).

*Capital expenditure* means an expenditure for a physical or operational change to a stationary source which exceeds the product of the applicable "annual asset guideline repair allowance percentage" specified in the latest edition of Internal Revenue Service (IRS) Publication 534 and the stationary source's basis, as defined by section 1012 of the Internal Revenue Code. However, the total expenditure for a physical or operational change to a stationary source must not be reduced by any "excluded additions" as defined for stationary sources constructed after December 31, 1981, in IRS Publication 534, as would be done for tax purposes. In addition, "annual asset guideline repair allowance" may be used even though it is excluded for tax purposes in IRS Publication 534.

*Commenced* means, with respect to the definition of "new source" in section 111(a)(2) of the Act, that an owner or operator has undertaken a continuous program of construction or modi-

fication or that an owner or operator has entered into a contractual obligation to undertake and complete, within a reasonable time, a continuous program of construction or modification.

*Compliance schedule* means the date or dates by which a source or category of sources is required to comply with the standards of this part and with any steps toward such compliance which are set forth in a waiver of compliance under § 61.11.

*Construction* means fabrication, erection, or installation of an affected facility.

*Effective date* is the date of promulgation in the FEDERAL REGISTER of an applicable standard or other regulation under this part.

*Existing source* means any stationary source which is not a new source.

*Issuance* of a part 70 permit will occur, if the State is the permitting authority, in accordance with the requirements of part 70 of this chapter and the applicable, approved State permit program. When the EPA is the permitting authority, issuance of a title V permit occurs immediately after the EPA takes final action on the final permit.

*Monitoring system* means any system, required under the monitoring sections in applicable subparts, used to sample and condition (if applicable), to analyze, and to provide a record of emissions or process parameters.

*New source* means any stationary source, the construction or modification of which is commenced after the publication in the FEDERAL REGISTER of proposed national emission standards for hazardous air pollutants which will be applicable to such source.

*Owner or operator* means any person who owns, leases, operates, controls, or supervises a stationary source.

*Part 70 permit* means any permit issued, renewed, or revised pursuant to part 70 of this chapter.

*Permit program* means a comprehensive State operating permit system established pursuant to title V of the Act (42 U.S.C. 7661) and regulations codified in part 70 of this chapter and applicable State regulations, or a comprehensive Federal operating permit system established pursuant to title V of the Act

and regulations codified in this chapter.

*Permitting authority* means:

(1) The State air pollution control agency, local agency, other State agency, or other agency authorized by the Administrator to carry out a permit program under part 70 of this chapter; or

(2) The Administrator, in the case of EPA-implemented permit programs under title V of the Act (42 U.S.C. 7661).

*Reference method* means any method of sampling and analyzing for an air pollutant, as described in Appendix B to this part.

*Run* means the net period of time during which an emission sample is collected. Unless otherwise specified, a run may be either intermittent or continuous within the limits of good engineering practice.

*Standard* means a national emission standard including a design, equipment, work practice or operational standard for a hazardous air pollutant proposed or promulgated under this part.

*Startup* means the setting in operation of a stationary source for any purpose.

*State* means all non-Federal authorities, including local agencies, interstate associations, and State-wide programs, that have delegated authority to implement:

(1) The provisions of this part; and/or

(2) The permit program established under part 70 of this chapter. The term State shall have its conventional meaning where clear from the context.

*Stationary source* means any building, structure, facility, or installation which emits or may emit any air pollutant which has been designated as hazardous by the Administrator.

*Title V permit* means any permit issued, renewed, or revised pursuant to Federal or State regulations established to implement title V of the Act (42 U.S.C. 7661). A title V permit issued by a State permitting authority is called a part 70 permit in this part.

[44 FR 55174, Sept. 25, 1979, as amended at 50 FR 46290, Nov. 7, 1985; 59 FR 12429, Mar. 16, 1994]

### § 61.03 Units and abbreviations.

Used in this part are abbreviations and symbols of units of measure. These are defined as follows:

(a) System International (SI) units of measure:

A=ampere  
g=gram  
Hz=hertz  
J=joule  
K=degree Kelvin  
kg=kilogram  
m=meter  
m<sup>2</sup>=square meter  
m<sup>3</sup>=cubic meter  
mg=milligram=10<sup>-3</sup> gram  
mm=millimeter=10<sup>-3</sup> meter  
Mg=megagram=10<sup>-6</sup> gram  
mol=mole  
N=newton  
ng=nanogram=10<sup>-9</sup> gram  
nm=nanometer=10<sup>-9</sup> meter  
Pa=pascal  
s=second  
V=volt  
W=watt  
Ω=ohm  
μg=microgram=10<sup>-6</sup> gram

(b) Other units of measure:

°C=degree Celsius (centigrade)  
cfm=cubic feet per minute  
cc=cubic centimeter  
Ci=curie  
d=day  
°F=degree Fahrenheit  
ft<sup>2</sup>=square feet  
ft<sup>3</sup>=cubic feet  
gal=gallon  
in=inch  
in Hg=inches of mercury  
in H<sub>2</sub>O=inches of water  
l=liter  
lb=pound  
lpm=liter per minute  
min=minute  
ml=milliliter=10<sup>-3</sup> liter  
mrem=millirem=10<sup>-3</sup> rem  
oz=ounces  
pCi=picocurie=10<sup>-12</sup> curie  
psig=pounds per square inch gage  
°R=degree Rankine  
μl=microliter=10<sup>-6</sup> liter  
v/v=volume per volume  
yd<sup>2</sup>=square yards  
yr=year

(c) Chemical nomenclature:

Be=beryllium  
Hg=mercury  
H<sub>2</sub>O=water

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### (d) Miscellaneous:

act=actual  
avg=average  
I.D.=inside diameter  
M=molar  
N=normal  
O.D.=outside diameter  
%=percent  
std=standard

[42 FR 51574, Sept. 29, 1977, as amended at 54 FR 51704, Dec. 15, 1989]

### § 61.04 Address.

(a) All requests, reports, applications, submittals, and other communications to the Administrator pursuant to this part shall be submitted in duplicate to the appropriate Regional Office of the U.S. Environmental Protection Agency to the attention of the Director of the Division indicated in the following list of EPA Regional Offices.

Region I (Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont), Director, Air Management Division, U.S. Environmental Protection Agency, John F. Kennedy Federal Building, Boston, MA 02203.

Region II (New Jersey, New York, Puerto Rico, Virgin Islands), Director, Air and Waste Management Division, U.S. Environmental Protection Agency, Federal Office Building, 26 Federal Plaza (Foley Square), New York, NY 10278.

Region III (Delaware, District of Columbia, Maryland, Pennsylvania, Virginia, West Virginia), Director, Air and Waste Management Division, U.S. Environmental Protection Agency, Curtis Building, Sixth and Walnut Streets, Philadelphia, PA 19106.

Region IV (Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee), Director, Air and Waste Management Division, U.S. Environmental Protection Agency, 345 Courtland Street, NE., Atlanta, GA 30365.

Region V (Illinois, Indiana, Michigan, Minnesota, Ohio, Wisconsin), Director, Air Management Division, U.S. Environmental Protection Agency, 230 South Dearborn Street, Chicago, IL 60604.

Region VI (Arkansas, Louisiana, New Mexico, Oklahoma, Texas); Director, Air, Pesticides, and Toxics Division; U.S. Environmental Protection Agency, 1445 Ross Avenue, Dallas, TX 75202.

Region VII (Iowa, Kansas, Missouri, Nebraska), Director, Air and Toxics Division, U.S. Environmental Protection Agency, 726 Minnesota Avenue, Kansas City, KS 66101.

Region VIII (Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming), Di-

rector, Air and Waste Management Division, U.S. Environmental Protection Agency, 1860 Lincoln Street, Denver, CO 80295.

Region IX (American Samoa, Arizona, California, Guam, Hawaii, Nevada), Director, Air and Waste Management Division, U.S. Environmental Protection Agency, 215 Fremont Street, San Francisco, CA 94105.

Region X (Alaska, Oregon, Idaho, Washington), Director, Air and Waste Management Division, U.S. Environmental Protection Agency, 1200 Sixth Avenue, Seattle, WA 98101.

(b) Section 112(d) directs the Administrator to delegate to each State, when appropriate, the authority to implement and enforce national emission standards for hazardous air pollutants for stationary sources located in such State. If the authority to implement and enforce a standard under this part has been delegated to a State, all information required to be submitted to EPA under paragraph (a) of this section shall also be submitted to the appropriate State agency (provided, that each specific delegation may exempt sources from a certain Federal or State reporting requirement). The Administrator may permit all or some of the information to be submitted to the appropriate State agency only, instead of to EPA and the State agency. The appropriate mailing address for those States whose delegation request has been approved is as follows:

(A) [Reserved]

(B) State of Alabama, Air Pollution Control Division, Air Pollution Control Commission, 645 S. McDonough Street, Montgomery, AL 36104.

(C) State of Alaska, Department of Environmental Conservation, 3220 Hospital Drive, Juneau, AK 99811.

(D) Arizona.

Arizona Department of Health Services, 1740 West Adams Street, Phoenix, AZ 85007.

Maricopa County Department of Health Services, Bureau of Air Pollution Control, 1825 East Roosevelt Street, Phoenix, AZ 85006.

Pima County Health Department, Air Quality Control District, 151 West Congress, Tucson, AZ 85701.

(E) State of Arkansas: Chief, Division of Air Pollution Control, Arkansas Department of Pollution Control and Ecology, 8001 National Drive, P.O. Box 9583, Little Rock, AR 72209.

(F) California.

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- Amador County Air Pollution Control District, P.O. Box 430, 810 Court Street, Jackson, CA 95642.
- Bay Area Air Pollution Control District, 939 Ellis Street, San Francisco, CA 94109.
- Butte County Air Pollution Control District, P.O. Box 1229, 316 Nelson Avenue, Oroville, CA 95965.
- Calaveras County Air Pollution Control District, Government Center, El Dorado Road, San Andreas, CA 95249.
- Colusa County Air Pollution Control District, 751 Fremont Street, Colusa, CA 95952.
- El Dorado Air Pollution Control District, 330 Fair Lane, Placerville, CA 95667.
- Fresno County Air Pollution Control District, 1221 Fulton Mall, Fresno, CA 93721.
- Glenn County Air Pollution Control District, P.O. Box 351, 720 North Colusa Street, Willows, CA 95988.
- Great Basin Unified Air Pollution Control District, 157 Short Street, suite 6, Bishop, CA 93514.
- Imperial County Air Pollution Control District, County Services Building, 939 West Main Street, El Centro, CA 92243.
- Kern County Air Pollution Control District, 1601 H Street, suite 250, Bakersfield, CA 93301.
- Kings County Air Pollution Control District, 330 Campus Drive, Hanford, CA 93230.
- Lake County Air Pollution Control District, 255 North Forbes Street, Lakeport, CA 95453.
- Lassen County Air Pollution Control District, 175 Russell Avenue, Susanville, CA 96130.
- Madera County Air Pollution Control District, 135 West Yosemite Avenue, Madera, CA 93637.
- Mariposa County Air Pollution Control District, Box 5, Mariposa, CA 95338.
- Mendocino County Air Pollution Control District, County Courthouse, Ukiah, CA 94582.
- Merced County Air Pollution Control District, P.O. Box 471, 240 East 15th Street, Merced, CA 95340.
- Modoc County Air Pollution Control District, 202 West 4th Street, Alturas, CA 96101.
- Monterey Bay Unified Air Pollution Control, 1164 Monroe Street, Suite 10, Salinas, CA 93906.
- Nevada County Air Pollution Control District, H.E.W. Complex, Nevada City, CA 95959.
- North Coast Unified Air Quality Management District, 5630 South Broadway, Eureka CA 95501.
- Northern Sonoma County Air Pollution Control District, 134 "A" Avenue, Auburn, CA 95448.
- Placer County Air Pollution Control District, 11491 "B" Avenue, Auburn, CA 95603.
- Plumas County Air Pollution Control District, P.O. Box 480, Quincy, CA 95971.
- Sacramento County Air Pollution Control District, 3701 Branch Center Road, Sacramento, CA 95827.
- San Bernardino County Air Pollution Control District, 15579-8th, Victorville, CA 92392.
- San Diego County Air Pollution Control District, 9150 Chesapeake Drive, San Diego, CA 92123.
- San Joaquin County Air Pollution Control District, 1601 East Hazelton Street (P.O. Box 2009), Stockton, CA 95201.
- San Luis Obispo County Air Pollution Control District, P.O. Box 637, San Luis Obispo, CA 93406.
- Santa Barbara County Air Pollution Control District, 315 Camino del Rimedio, Santa Barbara, CA 93110.
- Shasta County Air Pollution Control District, 2650 Hospital Lane, Redding, CA 96001.
- Sierra County Air Pollution Control District, P.O. Box 286, Downieville, CA 95936.
- Siskiyou County Air Pollution Control District, 525 South Foothill Drive, Yreka, CA 96097.
- South Coast Air Quality Management District, 9150 Flair Drive, El Monte, CA 91731.
- Stanislaus County Air Pollution Control District, 1030 Scenic Drive, Modesto, CA 95350.
- Sutter County Air Pollution Control District, Sutter County Office Building, 142 Garden Highway, Yuba City, CA 95991.
- Tehama County Air Pollution Control District, P.O. Box 38, 1760 Walnut Street, Red Bluff, CA 96080.
- Tulare County Air Pollution Control District, County Civic Center, Visalia, CA 93277.
- Tuolumne County Air Pollution Control District, 9 North Washington Street, Sonora, CA 95370.
- Ventura County Air Pollution Control District, 800 South Victoria Avenue, Ventura, CA 93009.
- Yolo-Solano Air Pollution Control District, P.O. Box 1006, 323 First Street, 15, Woodland, CA 95695.
- (G) State of Colorado, Department of Health, Air Pollution Control Division, 4210 East 11th Avenue, Denver, CO 80220.
- NOTE: For a table listing Region VIII's NESHAPs delegation status, see paragraph (c) of this section.
- (H) State of Connecticut, Bureau of Air Management, Department of Environmental Protection, State Office Building, 165 Capitol Avenue, Hartford, CT 06106.
- (I) State of Delaware:  
Delaware Department of Natural Resources and Environmental Control, Tatnall Building, P.O. Box 1401, Dover, DE 19901.
- (J) [Reserved]
- (K) Bureau of Air Quality Management, Department of Environmental Regulation,

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Twin Towers Office Building, 2600 Blair Stone Road, Tallahassee, FL 32301.

(L) State of Georgia, Environmental Protection Division, Department of Natural Resources, 270 Washington Street, SW., Atlanta, GA 30334.

(M) Hawaii Department of Health, 1250 Punchbowl Street, Honolulu, HI 96813.

Hawaii Department of Health (mailing address), Post Office Box 3378, Honolulu, HI 96801.

(N)-(O) [Reserved]

(P) State of Indiana, Indiana Department of Environmental Management, 105 South Meridian Street, P.O. Box 6015, Indianapolis, IN 46206.

(Q) State of Iowa: Iowa Department of Natural Resources, Environmental Protection Division, Henry A. Wallace Building, 900 East Grand, Des Moines, IA 50319.

(R) State of Kansas: Kansas Department of Health and Environment, Bureau of Air Quality and Radiation Control, Forbes Field, Topeka, KS 66620.

(S) Division of Air Pollution Control, Department for Natural Resources and Environmental Protection, U.S. 127, Frankfort, KY 40601.

(T) State of Louisiana: Program Administrator, Air Quality Division, Louisiana Department of Environmental Quality, P.O. Box 44096, Baton Rouge, LA 70804.

(U) State of Maine, Bureau of Air Quality Control, Department of Environmental Protection, State House, Station No. 17, Augusta, ME 04333.

(V) State of Maryland, Bureau of Air Quality and Noise Control, Maryland State Department of Health and Mental Hygiene, 201 West Preston Street, Baltimore, MD 21201.

(W) Commonwealth of Massachusetts, Division of Air Quality Control, Department of Environmental Protection, One Winter Street, 7th floor, Boston, MA 02108.

(X) State of Michigan, Air Pollution Control Division, Michigan Department of Natural Resources, Stevens T. Mason Building, 8th Floor, Lansing, MI 48926.

(Y) Minnesota Pollution Control Agency, Division of Air Quality, 520 Lafayette Road, St. Paul, MN 55155.

(Z) Bureau of Pollution Control, Department of Natural Resources, P.O. Box 10385, Jackson, MS 39209.

(AA) State of Missouri: Missouri Department of Natural Resources, Division of Environmental Quality, P.O. Box 176, Jefferson City, MO 65102.

(BB) State of Montana, Department of Health and Environmental Services, Air Quality Bureau, Cogswell Building, Helena, MT 59601.

NOTE: For a table listing Region VIII's NESHAPs delegation status, see paragraph (c) of this section.

(CC) State of Nebraska, Nebraska Department of Environmental Control, P.O. Box 94877, State House Station, Lincoln, NE 68509.

Lincoln-Lancaster County Health Department, Division of Environmental Health, 2200 St. Marys Avenue, Lincoln, NE 68502.

(DD) Nevada.

Clark County, County District Health Department, Air Pollution Control Division, 625 Shadow Lane, Las Vegas, NV 89106.

Nevada Department of Conservation and Natural Resources, Division of Environmental Protection, 201 South Fall Street, Carson City, NV 89710.

Washoe County District Health Department, Division of Environmental Protection, 10 Kirman Avenue, Reno, NV 89502.

(EE) State of New Hampshire, Air Resources Division, Department of Environmental Services, 64 North Main Street, Caller Box 2033, Concord, NH 03302-2033.

(FF) State of New Jersey: New Jersey Department of Environmental Protection, John Fitch Plaza, P.O. Box 2807, Trenton, NJ 08625.

(GG) State of New Mexico: Director, New Mexico Environmental Improvement Division, Health and Environment Department, 1190 St. Francis Drive, Santa Fe, NM 87503.

(i) The City of Albuquerque and Bernalillo County: Director, The Albuquerque Environmental Health Department, The City of Albuquerque, P.O. Box 1293, Albuquerque, NM 87103.

(HH) New York: New York State Department of Environmental Conservation, 50 Wolf Road, Albany, NY 12233, attention: Division of Air Resources.

(II) North Carolina Environmental Management Commission, Department of Natural and Economic Resources, Division of Environmental Management, P.O. Box 27687, Raleigh, NC 27611. Attention: Air Quality Section.

(JJ) State of North Dakota, State Department of Health and Consolidated Laboratories, Division of Environmental Engineering, State Capitol, Bismarck, ND 58505.

NOTE: For a table listing Region VIII's NESHAPs delegation status, see paragraph (c) of this section.

(KK) State of Ohio—

(i) Medina, Summit and Portage Counties: Director, Akron Regional Air Quality Management District, 177 South Broadway, Akron, OH 44308.

(ii) Stark County: Director, Air Pollution Control Division, Canton City Health Department, City Hall Annex Second Floor, 218 Cleveland Avenue S.W., Canton, OH 44702.

(iii) Butler, Clermont, Hamilton and Warren Counties: Director, Southwestern Ohio Air Pollution Control Agency, 2400 Beekman Street, Cincinnati, OH 45214.

(iv) Cuyahoga County: Commissioner, Division of Air Pollution Control, Department of Public Health and Welfare, 2735 Broadway Avenue, Cleveland, OH 44115.

(v) Belmont, Carroll, Columbiana, Harrison, Jefferson, and Monroe Counties: Director, North Ohio Valley Air Authority (NOVAA), 814 Adams Street, Steubenville, OH 43952.

(vi) Clark, Darke, Greene, Miami, Montgomery, and Preble Counties: Supervisor, Regional Air Pollution Control Agency (RAPCA), Montgomery County Health Department, 451 West Third Street, Dayton, OH 45402.

(vii) Lucas County and the City of Rossford (in Wood County): Director, Toledo Environmental Services Agency, 26 Main Street, Toledo, OH 43605.

(viii) Adams, Brown, Lawrence, and Scioto Counties: Engineer-Director, Air Division, Portsmouth City Health Department, 740 Second Street, Portsmouth, OH 45662.

(ix) Allen, Ashland, Auglaize, Crawford, Defiance, Erie, Fulton, Hancock, Hardin, Henry, Huron, Marion, Mercer, Ottawa, Paulding, Putnam, Richland, Sandusky, Seneca, Van West, Williams, Wood (except City of Rossford), and Wyandot Counties: Ohio Environmental Protection Agency, Northwest District Office, Air Pollution Unit, 1035 Dezlaz Grove Drive, Bowling Green, OH 43402.

(x) Ashtabula, Holmes, Lorain, and Wayne Counties: Ohio Environmental Protection Agency, Northeast District Office, Air Pollution Unit, 2110 East Aurora Road, Twinsburg, OH 44087.

(xi) Athens, Coshocton, Gallia, Guernsey, Hocking, Jackson, Meigs, Morgan, Muskingum, Noble, Perry, Pike, Ross, Tuscarawas, Vinton, and Washington Counties: Ohio Environmental Protection Agency, Southeast District Office, Air Pollution Unit, 2195 Front Street, Logan, OH 43138.

(xii) Champaign, Clinton, Highland, Logan, and Shelby Counties: Ohio Environmental Protection Agency, Southwest District Office, Air Pollution Unit, East Fourth Street, Dayton, OH 45402.

(xiii) Delaware, Fairfield, Fayette, Franklin, Knox, Licking, Madison, Morrow, Pickaway, and Union Counties: Ohio Environmental Protection Agency, Central District Office, Air Pollution Unit, P.O. Box 1049, Columbus, OH 43266-0149.

(xiv) Geauga and Lake Counties: Lake County General Health District, Air Pollution Control, 105 Main Street, Painesville, OH 44077.

(xv) Mahoning and Trumbull Counties: Mahoning-Trumbull Air Pollution Control Agency, 9 West Front Street, Youngstown, OH 44503.

(LL) State of Oklahoma, Oklahoma State Department of Health, Air Quality Service, P.O. Box 53551, Oklahoma City, OK 73152.

(i) Oklahoma City and County: Director, Oklahoma City-County Health Department, 921 Northeast 23rd Street, Oklahoma City, OK 73105.

(ii) Tulsa County: Tulsa City-County Health Department, 4616 East Fifteenth Street, Tulsa, OK 74112.

(MM) State of Oregon, Department of Environmental Quality, Yeon Building, 522 SW Fifth, Portland, OR 97204.

(i)-(vii) [Reserved]

(viii) Lane Regional Air Pollution Authority, 225 North Fifth, suite 501, Springfield, OR 97477.

(NN) Pennsylvania.

(i) City of Philadelphia: Philadelphia Department of Public Health, Air Management Services, 500 S. Broad Street, Philadelphia, PA 19146.

(ii) Commonwealth of Pennsylvania: Department of Environmental Resources, Post Office Box 2063, Harrisburg, PA 17120.

(iii) Allegheny County: Allegheny County Health Department, Bureau of Air Pollution Control, 301 Thirty-ninth Street, Pittsburgh, PA 15201.

(OO) State of Rhode Island, Division of Air and Hazardous Materials, Department of Environmental Management, 291 Promenade Street, Providence, RI 02908.

(PP) State of South Carolina, Office of Environmental Quality Control, Department of Health and Environmental Control, 2600 Bull Street, Columbia, SC 29201.

(QQ) State of South Dakota, Department of Water and Natural Resources, Office of Air Quality and Solid Waste, Joe Foss Building, 523 East Capitol, Pierre, SD 57501-3181.

NOTE: For a table listing Region VIII's NESHAPs delegation status, see paragraph (c) of this section.

(RR) Division of Air Pollution Control, Tennessee Department of Public Health, 256 Capitol Hill Building, Nashville, TN 37219.

Knox County Department of Air Pollution, City/County Building, room L222, 400 Main Avenue, Knoxville, TN 37902.

Air Pollution Control Bureau, Metropolitan Health Department, 311 23rd Avenue North, Nashville, TN 37203.

(SS) State of Texas, Texas Air Control Board, 6330 Highway 290 East, Austin, TX 78723.

(TT) State of Utah, Department of Health, Bureau of Air Quality, 288 North 1460 West, P.O. Box 16690, Salt Lake City, UT 84116-0690.

NOTE: For a table listing Region VIII's NESHAPs delegation status, see paragraph (c) of this section.

(UU) State of Vermont, Air Pollution Control Division, Agency of Natural Resources, Building 3 South, 103 South Main Street, Waterbury, VT 05676.

(VV) Commonwealth of Virginia, Virginia State Air Pollution Control Board, room

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1106, Ninth Street Office Building, Richmond, VA 23219.

(WW)(i) Washington; State of Washington, Department of Ecology, Olympia, WA 98504.

(ii) Northwest Air Pollution Authority, 207 Pioneer Building, Second and Pine Streets, Mount Vernon, WA 98273.

(iii) Puget Sound Air Pollution Control Agency, 200 West Mercer Street, room 205, Seattle, WA 98119-3958.

(iv) Spokane County Air Pollution Control Authority, North 811 Jefferson, Spokane, WA 99201.

(v) Yakima County Clean Air Authority, County Courthouse, Yakima, WA 98901.

(vi) Olympic Air Pollution Control Authority, 120 East State Avenue, Olympia, WA 98501.

(vii) Southwest Air Pollution Control Authority, suite 7601 H, NE Hazel Dell Avenue, Vancouver, WA 98665.

(viii) Grant County Clean Air Authority, P.O. Box 37, Ephrata, WA 98823.

(XX) State of West Virginia: Air Pollution Control Commission, 1558 Washington Street, East, Charleston, WV 25311.

(YY) Wisconsin—Wisconsin Department of Natural Resources, P.O. Box 7921, Madison, WI 53707.

(ZZ)-(AAA) [Reserved]

(BBB) Commonwealth of Puerto Rico: Commonwealth of Puerto Rico Environmental Quality Board, P.O. Box 11785, Santurce, PR 00910.

(CCC) U.S. Virgin Islands: U.S. Virgin Islands Department of Conservation and Cultural Affairs, P.O. Box 578, Charlotte Amalie, St. Thomas, U.S. Virgin Islands 00801.

(c) The following is a table indicating the delegation status of National Emission Standards for Hazardous Air Pollutants in Region VIII.

**REGION VIII.—DELEGATION STATUS OF NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS<sup>1</sup>**

| Subpart   | CO    | MT <sup>2</sup> | ND <sup>2</sup> | SD <sup>2</sup> | UT <sup>2</sup> | WY |
|---|-------|-----------------|-----------------|-----------------|-----------------|----|
| A General Provisions .....  | *     | *               | *               | *               | *               |    |
| B Radon Emissions from Underground Uranium Mines .....  | ..... | .....           | .....           | .....           | *               |    |
| C Beryllium .....   | *     | *               | *               | .....           | *               |    |
| D Beryllium Rocket Motor Firing .....   | *     | *               | *               | .....           | *               |    |
| E Mercury .....   | *     | *               | *               | .....           | *               |    |
| F Vinyl Chloride .....  | *     | *               | *               | .....           | *               |    |
| H Emissions of Radionuclides other than Radon from Department of Energy Facilities .....  | ..... | .....           | .....           | .....           | .....           |    |
| I Radionuclide Emissions from Facilities Licensed by the Nuclear Regulatory Commission and Federal Facilities not covered by Subpart H. | ..... | .....           | .....           | .....           | .....           |    |
| J Equipment Leaks (Fugitive Emission Sources) of Benzene .....  | *     | *               | *               | .....           | *               |    |
| K Radionuclide Emissions from Elemental Phosphorus Plants .....   | ..... | .....           | .....           | .....           | .....           |    |
| L Benzene Emissions from Coke By-Product Recovery Plants .....  | ..... | *               | *               | .....           | *               |    |
| M Asbestos .....  | *     | *               | *               | *               | *               | *3 |
| N Inorganic Arsenic Emissions from Glass Manufacturing Plants .....   | ..... | *               | *               | .....           | *               |    |
| O Inorganic Arsenic Emissions from Primary Copper Smelters .....  | ..... | *               | *               | .....           | *               |    |
| P Inorganic Arsenic Emissions from Arsenic Trioxide and Metallic Arsenic Production Facilities .....                                    | ..... | *               | *               | .....           | *               |    |
| Q Radon Emissions from Department of Energy Facilities .....  | ..... | .....           | .....           | .....           | *               |    |
| R Radon Emission from Phosphogypsum Stacks .....  | ..... | .....           | .....           | .....           | *               |    |
| T Radon Emissions from the Disposal of Uranium Mill Tailings .....  | ..... | .....           | .....           | .....           | *               |    |
| V Equipment Leaks (Fugitive Emission Sources) .....   | ..... | *               | *               | .....           | *               |    |
| W Radon Emissions from Operating Mill Tailings .....  | ..... | .....           | .....           | .....           | *               |    |
| Y Benzene Emissions from Benzene Storage Vessels .....  | ..... | *               | *               | .....           | *               |    |
| BB Benzene Emission from Benzene Transfer Operations .....  | ..... | *               | *               | .....           | *               |    |
| FF Benzene Waste Operations .....   | ..... | *               | *               | .....           | *               |    |

<sup>1</sup>Indicates approval of delegation of subpart to state.

<sup>2</sup>Authorities which may not be delegated include 40 CFR 61.04(b), 61.12(d)(1), 61.13(h)(1)(ii), 61.112(c), 61.164(a)(2), 61.164(a)(3), 61.172(b)(2)(ii)(B), 61.172(b)(2)(ii)(C), 61.174 (a)(2), 61.174(a)(3), 61.242-1(c)(2), 61.244, and all authorities listed as not delegable in each subpart under Delegation of Authority.

<sup>3</sup>Indicates approval of National Emission Standards for Hazardous Air Pollutants as part of the State Implementation Plan (SIP) with the exception of the radionuclide NESHAP Subparts B, Q, R, T, W which were approved through Section 112(l) of the Clean Air Act.

<sup>4</sup>Delegation only for asbestos demolition, renovation, spraying, manufacturing, and fabricating operations, insulating materials, waste disposal for demolition, renovation, spraying, manufacturing and fabricating operations, inactive waste disposal sites for manufacturing and fabricating operations, and operations that convert asbestos-containing waste material into nonasbestos (asbestos-free) material.

[40 FR 18170, Apr. 25, 1975]

EDITORIAL NOTE: For FEDERAL REGISTER citations to §61.04 see the List of CFR Sections Affected appearing in the Finding Aids section of this volume.

**§ 61.05 Prohibited activities.**

(a) After the effective date of any standard, no owner or operator shall construct or modify any stationary source subject to that standard without first obtaining written approval from the Administrator in accordance with this subpart, except under an exemption granted by the President under section 112(c)(2) of the Act. Sources, the construction or modification of which commenced after the publication date of the standards proposed to be applicable to the sources, are subject to this prohibition.

(b) After the effective date of any standard, no owner or operator shall operate a new stationary source subject to that standard in violation of the standard, except under an exemption granted by the President under section 112(c)(2) of the Act.

(c) Ninety days after the effective date of any standard, no owner or operator shall operate any existing source subject to that standard in violation of the standard, except under a waiver granted by the Administrator under this part or under an exemption granted by the President under section 112(c)(2) of the Act.

(d) No owner or operator subject to the provisions of this part shall fail to report, revise reports, or report source test results as required under this part.

[38 FR 8826, Apr. 6, 1973, as amended at 50 FR 46291, Nov. 7, 1985]

**§ 61.06 Determination of construction or modification.**

An owner or operator may submit to the Administrator a written application for a determination of whether actions intended to be taken by the owner or operator constitute construction or modification, or commencement thereof, of a source subject to a standard. The Administrator will notify the owner or operator of his determination within 30 days after receiving sufficient information to evaluate the application.

[50 FR 46291, Nov. 7, 1985]

**§ 61.07 Application for approval of construction or modification.**

(a) The owner or operator shall submit to the Administrator an applica-

tion for approval of the construction of any new source or modification of any existing source. The application shall be submitted before the construction or modification is planned to commence, or within 30 days after the effective date if the construction or modification had commenced before the effective date and initial startup has not occurred. A separate application shall be submitted for each stationary source.

(b) Each application for approval of construction shall include—

(1) The name and address of the applicant;

(2) The location or proposed location of the source; and

(3) Technical information describing the proposed nature, size, design, operating design capacity, and method of operation of the source, including a description of any equipment to be used for control of emissions. Such technical information shall include calculations of emission estimates in sufficient detail to permit assessment of the validity of the calculations.

(c) Each application for approval of modification shall include, in addition to the information required in paragraph (b) of this section—

(1) The precise nature of the proposed changes;

(2) The productive capacity of the source before and after the changes are completed; and

(3) Calculations of estimates of emissions before and after the changes are completed, in sufficient detail to permit assessment of the validity of the calculations.

[50 FR 46291, Nov. 7, 1985]

**§ 61.08 Approval of construction or modification.**

(a) The Administrator will notify the owner or operator of approval or intention to deny approval of construction or modification within 60 days after receipt of sufficient information to evaluate an application under § 61.07.

(b) If the Administrator determines that a stationary source for which an application under § 61.07 was submitted will not cause emissions in violation of a standard if properly operated, the Administrator will approve the construction or modification.

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(c) Before denying any application for approval of construction or modification, the Administrator will notify the applicant of the Administrator's intention to issue the denial together with—

(1) Notice of the information and findings on which the intended denial is based; and

(2) Notice of opportunity for the applicant to present, within such time limit as the Administrator shall specify, additional information or arguments to the Administrator before final action on the application.

(d) A final determination to deny any application for approval will be in writing and will specify the grounds on which the denial is based. The final determination will be made within 60 days of presentation of additional information or arguments, or 60 days after the final date specified for presentation if no presentation is made.

(e) Neither the submission of an application for approval nor the Administrator's approval of construction or modification shall—

(1) Relieve an owner or operator of legal responsibility for compliance with any applicable provisions of this part or of any other applicable Federal, State, or local requirement; or

(2) Prevent the Administrator from implementing or enforcing this part or taking any other action under the Act.

[50 FR 46291, Nov. 7, 1985]

### § 61.09 Notification of startup.

(a) The owner or operator of each stationary source which has an initial startup after the effective date of a standard shall furnish the Administrator with written notification as follows:

(1) A notification of the anticipated date of initial startup of the source not more than 60 days nor less than 30 days before that date.

(2) A notification of the actual date of initial startup of the source within 15 days after that date.

(b) If any State or local agency requires a notice which contains all the information required in the notification in paragraph (a) of this section, sending the Administrator a copy of

that notification will satisfy paragraph (a) of this section.

[50 FR 46291, Nov. 7, 1985]

### § 61.10 Source reporting and waiver request.

(a) The owner or operator of each existing source or each new source which had an initial startup before the effective date shall provide the following information in writing to the Administrator within 90 days after the effective date:

(1) Name and address of the owner or operator.

(2) The location of the source.

(3) The type of hazardous pollutants emitted by the stationary source.

(4) A brief description of the nature, size, design, and method of operation of the stationary source including the operating design capacity of the source. Identify each point of emission for each hazardous pollutant.

(5) The average weight per month of the hazardous materials being processed by the source, over the last 12 months preceding the date of the report.

(6) A description of the existing control equipment for each emission point including—

(i) Each control device for each hazardous pollutant; and

(ii) Estimated control efficiency (percent) for each control device.

(7) A statement by the owner or operator of the source as to whether the source can comply with the standards within 90 days after the effective date.

(b) The owner or operator of an existing source unable to comply with an applicable standard may request a waiver of compliance with that standard for a period not exceeding 2 years after the effective date. Any request shall be in writing and shall include the following information:

(1) A description of the controls to be installed to comply with the standard.

(2) A compliance schedule, including the date each step toward compliance will be reached. The list shall include as a minimum the following dates:

(i) Date by which contracts for emission control systems or process changes for emission control will be awarded, or date by which orders will

be issued for the purchase of component parts to accomplish emission control or process changes;

(ii) Date of initiation of onsite construction or installation of emission control equipment or process change;

(iii) Date by which onsite construction or installation of emission control equipment or process change is to be completed; and

(iv) Date by which final compliance is to be achieved.

(3) A description of interim emission control steps which will be taken during the waiver period.

(c) Any change in the information provided under paragraph (a) of this section or § 61.07(b) shall be provided to the Administrator within 30 days after the change. However, if any change will result from modification of the source, §§ 61.07(c) and 61.08 apply.

(d) A possible format for reporting under this section is included as appendix A of this part. Advice on reporting the status of compliance may be obtained from the Administrator.

(e) For the purposes of this part, time periods specified in days shall be measured in calendar days, even if the word “calendar” is absent, unless otherwise specified in an applicable requirement.

(f) For the purposes of this part, if an explicit postmark deadline is not specified in an applicable requirement for the submittal of a notification, application, report, or other written communication to the Administrator, the owner or operator shall postmark the submittal on or before the number of days specified in the applicable requirement. For example, if a notification must be submitted 15 days before a particular event is scheduled to take place, the notification shall be postmarked on or before 15 days preceding the event; likewise, if a notification must be submitted 15 days after a particular event takes place, the notification shall be postmarked on or before 15 days following the end of the event. The use of reliable non-Government mail carriers that provide indications of verifiable delivery of information required to be submitted to the Administrator, similar to the postmark provided by the U.S. Postal Service, or alternative means of delivery agreed to

by the permitting authority, is acceptable.

(g) Notwithstanding time periods or postmark deadlines specified in this part for the submittal of information to the Administrator by an owner or operator, or the review of such information by the Administrator, such time periods or deadlines may be changed by mutual agreement between the owner or operator and the Administrator. Procedures governing the implementation of this provision are specified in paragraph (j) of this section.

(h) If an owner or operator of a stationary source in a State with delegated authority is required to submit reports under this part to the State, and if the State has an established timeline for the submission of reports that is consistent with the reporting frequency(ies) specified for such source under this part, the owner or operator may change the dates by which reports under this part shall be submitted (without changing the frequency of reporting) to be consistent with the State’s schedule by mutual agreement between the owner or operator and the State. The allowance in the previous sentence applies in each State beginning 1 year after the source is required to be in compliance with the applicable subpart in this part. Procedures governing the implementation of this provision are specified in paragraph (j) of this section.

(i) If an owner or operator supervises one or more stationary sources affected by standards set under this part and standards set under part 60, part 63, or both such parts of this chapter, he/she may arrange by mutual agreement between the owner or operator and the Administrator (or the State with an approved permit program) a common schedule on which reports required by each applicable standard shall be submitted throughout the year. The allowance in the previous sentence applies in each State beginning 1 year after the source is required to be in compliance with the applicable subpart in this part, or 1 year after the source is required to be in compliance with the applicable part 60 or part 63 standard,

whichever is latest. Procedures governing the implementation of this provision are specified in paragraph (j) of this section.

(j)(1)(i) Until an adjustment of a time period or postmark deadline has been approved by the Administrator under paragraphs (j)(2) and (j)(3) of this section, the owner or operator of an affected source remains strictly subject to the requirements of this part.

(ii) An owner or operator shall request the adjustment provided for in paragraphs (j)(2) and (j)(3) of this section each time he or she wishes to change an applicable time period or postmark deadline specified in this part.

(2) Notwithstanding time periods or postmark deadlines specified in this part for the submittal of information to the Administrator by an owner or operator, or the review of such information by the Administrator, such time periods or deadlines may be changed by mutual agreement between the owner or operator and the Administrator. An owner or operator who wishes to request a change in a time period or postmark deadline for a particular requirement shall request the adjustment in writing as soon as practicable before the subject activity is required to take place. The owner or operator shall include in the request whatever information he or she considers useful to convince the Administrator that an adjustment is warranted.

(3) If, in the Administrator's judgment, an owner or operator's request for an adjustment to a particular time period or postmark deadline is warranted, the Administrator will approve the adjustment. The Administrator will notify the owner or operator in writing of approval or disapproval of the request for an adjustment within 15 calendar days of receiving sufficient information to evaluate the request.

(4) If the Administrator is unable to meet a specified deadline, he or she will notify the owner or operator of any significant delay and inform the owner or operator of the amended schedule.

[38 FR 8826, Apr. 6, 1973, as amended at 50 FR 46292, Nov. 7, 1985; 59 FR 12430, Mar. 16, 1994]

#### § 61.11 Waiver of compliance.

(a) Based on the information provided in any request under § 61.10, or other information, the Administrator may grant a waiver of compliance with a standard for a period not exceeding 2 years after the effective date of the standard.

(b) The waiver will be in writing and will—

(1) Identify the stationary source covered;

(2) Specify the termination date of the waiver;

(3) Specify dates by which steps toward compliance are to be taken; and

(4) Specify any additional conditions which the Administrator determines necessary to assure installation of the necessary controls within the waiver period and to assure protection of the health of persons during the waiver period.

(c) The Administrator may terminate the waiver at an earlier date than specified if any specification under paragraphs (b)(3) and (b)(4) of this section are not met.

(d) Before denying any request for a waiver, the Administrator will notify the owner or operator making the request of the Administrator's intention to issue the denial, together with—

(1) Notice of the information and findings on which the intended denial is based; and

(2) Notice of opportunity for the owner or operator to present, within the time limit the Administrator specifies, additional information or arguments to the Administrator before final action on the request.

(e) A final determination to deny any request for a waiver will be in writing and will set forth the specific grounds on which the denial is based. The final determination will be made within 60 days after presentation of additional information or argument; or within 60 days after the final date specified for the presentation if no presentation is made.

(f) The granting of a waiver under this section shall not abrogate the Administrator's authority under section 114 of the Act.

[50 FR 46292, Nov. 7, 1985]

**§ 61.12 Compliance with standards and maintenance requirements.**

(a) Compliance with numerical emission limits shall be determined by emission tests established in § 61.13 unless otherwise specified in an individual subpart.

(b) Compliance with design, equipment, work practice or operational standards shall be determined as specified in an individual subpart.

(c) The owner or operator of each stationary source shall maintain and operate the source, including associated equipment for air pollution control, in a manner consistent with good air pollution control practice for minimizing emissions. Determination of whether acceptable operating and maintenance procedures are being used will be based on information available to the Administrator which may include, but is not limited to, monitoring results, review of operating and maintenance procedures, and inspection of the source.

(d)(1) If, in the Administrator's judgment, an alternative means of emission limitation will achieve a reduction in emissions of a pollutant from a source at least equivalent to the reduction in emissions of that pollutant from that source achieved under any design, equipment, work practice or operational standard, the Administrator will publish in the FEDERAL REGISTER a notice permitting the use of the alternative means for purposes of compliance with the standard. The notice will restrict the permission to the source(s) or category(ies) of sources on which the alternative means will achieve equivalent emission reductions. The notice may condition permission on requirements related to the operation and maintenance of the alternative means.

(2) Any notice under paragraph (d)(1) shall be published only after notice and an opportunity for a hearing.

(3) Any person seeking permission under this subsection shall, unless otherwise specified in the applicable subpart, submit a proposed test plan or the results of testing and monitoring, a description of the procedures followed in testing or monitoring, and a descrip-

tion of pertinent conditions during testing or monitoring.

[50 FR 46292, Nov. 7, 1985]

**§ 61.13 Emission tests and waiver of emission tests.**

(a) If required to do emission testing by an applicable subpart and unless a waiver of emission testing is obtained under this section, the owner or operator shall test emissions from the source—

(1) Within 90 days after the effective date, for an existing source or a new source which has an initial startup date before the effective date; or

(2) Within 90 days after initial startup, for a new source which has an initial startup date after the effective date.

(b) The Administrator may require an owner or operator to test emissions from the source at any other time when the action is authorized by section 114 of the Act.

(c) The owner or operator shall notify the Administrator of the emission test at least 30 days before the emission test to allow the Administrator the opportunity to have an observer present during the test.

(d) If required to do emission testing, the owner or operator of each new source and, at the request of the Administrator, the owner or operator of each existing source shall provide emission testing facilities as follows:

(1) Sampling ports adequate for test methods applicable to each source.

(2) Safe sampling platform(s).

(3) Safe access to sampling platform(s).

(4) Utilities for sampling and testing equipment.

(5) Any other facilities that the Administrator needs to safely and properly test a source.

(e) Each emission test shall be conducted under such conditions as the Administrator shall specify based on design and operational characteristics of the source.

(f) Unless otherwise specified in an applicable subpart, samples shall be analyzed and emissions determined within 30 days after each emission test has been completed. The owner or operator shall report the determinations of the emission test to the Administrator

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by a registered letter sent before the close of business on the 31st day following the completion of the emission test.

(g) The owner or operator shall retain at the source and make available, upon request, for inspection by the Administrator, for a minimum of 2 years, records of emission test results and other data needed to determine emissions.

(h)(1) Emission tests shall be conducted as set forth in this section, the applicable subpart and appendix B unless the Administrator—

(i) Specifies or approves the use of a reference method with minor changes in methodology; or

(ii) Approves the use of an alternative method; or

(iii) Waives the requirement for emission testing because the owner or operator of a source has demonstrated by other means to the Administrator's satisfaction that the source is in compliance with the standard.

(2) If the Administrator finds reasonable grounds to dispute the results obtained by an alternative method, he may require the use of a reference method. If the results of the reference and alternative methods do not agree, the results obtained by the reference method prevail.

(3) The owner or operator may request approval for the use of an alternative method at any time, except—

(i) For an existing source or a new source that had an initial startup before the effective date, any request for use of an alternative method during the initial emission test shall be submitted to the Administrator within 30 days after the effective date, or with the request for a waiver of compliance if one is submitted under § 60.10(b); or

(ii) For a new source that has an initial startup after the effective date, any request for use of an alternative method during the initial emission test shall be submitted to the Administrator no later than with the notification of anticipated startup required under § 60.09.

(i)(1) Emission tests may be waived upon written application to the Administrator if, in the Administrator's judgment, the source is meeting the standard, or the source is being operated

under a waiver or compliance, or the owner or operator has requested a waiver of compliance and the Administrator is still considering that request.

(2) If application for waiver of the emission test is made, the application shall accompany the information required by § 61.10 or the notification of startup required by § 61.09, whichever is applicable. A possible format is contained in appendix A to this part.

(3) Approval of any waiver granted under this section shall not abrogate the Administrator's authority under the Act or in any way prohibit the Administrator from later cancelling the waiver. The cancellation will be made only after notice is given to the owner or operator of the source.

[50 FR 46292, Nov. 7, 1985]

### § 61.14 Monitoring requirements.

(a) Unless otherwise specified, this section applies to each monitoring system required under each subpart which requires monitoring.

(b) Each owner or operator shall maintain and operate each monitoring system as specified in the applicable subpart and in a manner consistent with good air pollution control practice for minimizing emissions. Any unavoidable breakdown or malfunction of the monitoring system should be repaired or adjusted as soon as practicable after its occurrence. The Administrator's determination of whether acceptable operating and maintenance procedures are being used will be based on information which may include, but not be limited to, review of operating and maintenance procedures, manufacturer recommendations and specifications, and inspection of the monitoring system.

(c) When required by the applicable subpart, and at any other time the Administrator may require, the owner or operator of a source being monitored shall conduct a performance evaluation of the monitoring system and furnish the Administrator with a copy of a written report of the results within 60 days of the evaluation. Such a performance evaluation shall be conducted according to the applicable specifications and procedures described in the applicable subpart. The owner or operator of

the source shall furnish the Administrator with written notification of the date of the performance evaluation at least 30 days before the evaluation is to begin.

(d) When the effluents from a single source, or from two or more sources subject to the same emission standards, are combined before being released to the atmosphere, the owner or operator shall install a monitoring system on each effluent or on the combined effluent. If two or more sources are not subject to the same emission standards, the owner or operator shall install a separate monitoring system on each effluent, unless otherwise specified. If the applicable standard is a mass emission standard and the effluent from one source is released to the atmosphere through more than one point, the owner or operator shall install a monitoring system at each emission point unless the installation of fewer systems is approved by the Administrator.

(e) The owner or operator of each monitoring system shall reduce the monitoring data as specified in each applicable subpart. Monitoring data recorded during periods of unavoidable monitoring system breakdowns, repairs, calibration checks, and zero and span adjustments shall not be included in any data average.

(f) The owner or operator shall maintain records of monitoring data, monitoring system calibration checks, and the occurrence and duration of any period during which the monitoring system is malfunctioning or inoperative. These records shall be maintained at the source for a minimum of 2 years and made available, upon request, for inspection by the Administrator.

(g)(1) Monitoring shall be conducted as set forth in this section and the applicable subpart unless the Administrator—

(i) Specifies or approves the use of the specified monitoring requirements and procedures with minor changes in methodology; or

(ii) Approves the use of alternatives to any monitoring requirements or procedures.

(2) If the Administrator finds reasonable grounds to dispute the results obtained by an alternative monitoring

method, the Administrator may require the monitoring requirements and procedures specified in this part.

[50 FR 46293, Nov. 7, 1985]

**§ 61.15 Modification.**

(a) Except as provided under paragraph (d) of this section, any physical or operational change to a stationary source which results in an increase in the rate of emission to the atmosphere of a hazardous pollutant to which a standard applies shall be considered a modification.

(b) Upon modification, an existing source shall become a new source for each hazardous pollutant for which the rate of emission to the atmosphere increases and to which a standard applies.

(c) Emission rate shall be expressed as kg/hr of any hazardous pollutant discharged into the atmosphere for which a standard is applicable. The Administrator shall use the following to determine the emission rate:

(1) Emission factors as specified in the background information document (BID) for the applicable standard, or in the latest issue of "Compilation of Air Pollutant Emission Factors," EPA Publication No. AP-42, or other emission factors determined by the Administrator to be superior to AP-42 emission factors, in cases where use of emission factors demonstrates that the emission rate will clearly increase or clearly not increase as a result of the physical or operational change.

(2) Material balances, monitoring data, or manual emission tests in cases where use of emission factors, as referenced in paragraph (c)(1) of this section, does not demonstrate to the Administrator's satisfaction that the emission rate will clearly increase or clearly not increase as a result of the physical or operational change, or where an interested person demonstrates to the Administrator's satisfaction that there are reasonable grounds to dispute the result obtained by the Administrator using emission factors. When the emission rate is based on results from manual emission tests or monitoring data, the procedures specified in appendix C of 40 CFR part 60 shall be used to determine whether an increase in emission rate

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has occurred. Tests shall be conducted under such conditions as the Administrator shall specify to the owner or operator. At least three test runs must be conducted before and at least three after the physical or operational change. If the Administrator approves, the results of the emission tests required in §61.13(a) may be used for the test runs to be conducted before the physical or operational change. All operating parameters which may affect emissions must be held constant to the maximum degree feasible for all test runs.

(d) The following shall not, by themselves, be considered modifications under this part:

(1) Maintenance, repair, and replacement which the Administrator determines to be routine for a source category.

(2) An increase in production rate of a stationary source, if that increase can be accomplished without a capital expenditure on the stationary source.

(3) An increase in the hours of operation.

(4) Any conversion to coal that meets the requirements specified in section 111(a)(8) of the Act.

(5) The relocation or change in ownership of a stationary source. However, such activities must be reported in accordance with §61.10(c).

[50 FR 46294, Nov. 7, 1985]

### §61.16 Availability of information.

The availability to the public of information provided to, or otherwise obtained by, the Administrator under this part shall be governed by part 2 of this chapter.

[38 FR 8826, Apr. 6, 1973. Redesignated at 50 FR 46294, Nov. 7, 1985]

### §61.17 State authority.

(a) This part shall not be construed to preclude any State or political subdivision thereof from—

(1) Adopting and enforcing any emission limiting regulation applicable to a stationary source, provided that such emission limiting regulation is not less stringent than the standards prescribed under this part; or

(2) Requiring the owner or operator of a stationary source to obtain per-

mits, licenses, or approvals prior to initiating construction, modification, or operation of the source.

[50 FR 46294, Nov. 7, 1985]

### §61.18 Incorporations by reference.

The materials listed below are incorporated by reference in the corresponding sections noted. These incorporations by reference were approved by the Director of the Federal Register on the date listed. These materials are incorporated as they exist on the date of the approval, and a notice of any change in these materials will be published in the FEDERAL REGISTER. The materials are available for purchase at the corresponding address noted below, and all are available for inspection at the Office of the Federal Register, 800 North Capitol Street, NW., suite 700, Washington, DC and the Library (MD-35), U.S. EPA, Research Triangle Park, North Carolina.

(a) The following material is available for purchase from at least one of the following addresses: American Society for Testing and Materials (ASTM), 1916 Race Street, Philadelphia, Pennsylvania 19103; or University Microfilms International, 300 North Zeeb Road, Ann Arbor, Michigan 48106.

(1) ASTM D737-75, Standard Test Method for Air Permeability of Textile Fabrics, incorporation by reference (IBR) approved January 27, 1983, for §61.23(a).

(2) ASTM D 1193-77, Standard Specification for Reagent Water, IBR approved for Method 101, par. 6.1.1; Method 101A, par. 6.1.1; Method 104, par. 3.1.2.

(3) ASTM D 2986-71 (Reapproved 1978), Standard Method for Evaluation of Air, Assay Media by the Monodisperse DOP (Dioctyl Phthalate) Smoke Test, IBR approved for Method 103, par. 2.1.3; Method 104, par. 3.1.1.

(4) ASTM D2267-68 (reapproved 1978) Aromatics in Light Naphthas and Aviation Gasoline by Gas Chromatography, IBR approved June 6, 1984, for §61.245(d)(1) and IBR approved September 30, 1986 for §61.67(h)(1).

(5) ASTM D 2382-76, Heat of Combustion of Hydrocarbon Fuels by Bomb Calorimeter (High-Precision Method), IBR approved June 6, 1984, for §61.245(e)(3).

(6) ASTM D 2504-67 (Reapproved 1977), Noncondensable Gases in C<sub>3</sub> and Lighter Hydrocarbon Products by Gas Chromatography, IBR approved June 6, 1984, for §61.245(e)(3).

(7) ASTM D 836-84, Standard Specification for Industrial Grade Benzene, IBR approved September 14, 1989, for §61.270(a).

(8) ASTM D 835-85, Standard Specification for Refined Benzene-485, IBR approved September 14, 1989, for § 61.270(a).

(9) ASTM D 2359-85a, Standard Specification for Refined Benzene-535, IBR approved September 14, 1989, for § 61.270(a).

(10) ASTM D 4734-87, Standard Specification for Refined Benzene-545, IBR approved September 14, 1989, for § 61.270(a).

(11) ASTM E 50-82 (reapproved 1986), Standard Practices for Apparatus Reagents, and Safety Precautions for Chemical Analysis of Metals, IBR approved for Method 108C, par. 2.1.4.

(b) The following material is available from the U.S. EPA Environmental Monitoring and Support Laboratory, Cincinnati, Ohio 45268.

(1) Method 601, Test Method for Purgeable Halocarbons, July 1982, IBR approved September 30, 1986, for § 61.67(g)(2).

(c) The following material is available for purchase from the American National Standards Institute, Inc., 1430 Broadway, New York, NY 10018.

(1) ANSI N13.1-1969, "Guide to Sampling Airborne Radioactive Materials in Nuclear Facilities," IBR approved for §§ 61.93(b)(2)(ii); 61.107(b)(2)(ii); and Method 114, par. 2.1 of appendix B to part 61.

(d) The following material is available from the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402-9325, telephone (202) 783-3238.

(1) Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, EPA Publication SW-846, Third Edition, November 1986, as amended by Revision I, December 1987, Order Number 955-001-00000-1:

(i) Method 8020, Aromatic Volatile Organics, IBR approved March 7, 1990, for § 61.355(c)(2)(iv)(A).

(ii) Method 8021, Volatile Organic Compounds in Water by Purge and Trap Capillary Column Gas Chromatography with Photoionization and Electrolytic Conductivity Detectors in Series, IBR approved March 7, 1990, for § 61.355(c)(2)(iv)(B).

(iii) Method 8240, Gas Chromatography/Mass Spectrometry for Volatile Organics, IBR approved March 7, 1990, for § 61.355(c)(2)(iv)(C).

(iv) Method 8260, Gas Chromatography/Mass Spectrometry for Volatile Organics: Capillary Column Technique, IBR approved March 7, 1990, for § 61.355(c)(2)(iv)(D).

[48 FR 3740, Jan. 27, 1983, as amended at 48 FR 55266, Dec. 9, 1983; 49 FR 23520, June 6, 1984; 51 FR 34914, Sept. 30, 1986; 54 FR 38073, Sept. 14, 1989; 54 FR 51704, Dec. 15, 1989; 55 FR 8341, Mar. 7, 1990; 55 FR 18331, May 2, 1990; 55 FR 22027, May 31, 1990; 55 FR 32914, Aug. 13, 1990]

#### § 61.19 Circumvention.

No owner or operator shall build, erect, install, or use any article machine, equipment, process, or method, the use of which conceals an emission which would otherwise constitute a violation of an applicable standard. Such concealment includes, but is not limited to, the use of gaseous dilutants to achieve compliance with a visible emissions standard, and the piecemeal carrying out of an operation to avoid coverage by a standard that applies only to operations larger than a specified size.

[40 FR 48299, Oct. 14, 1975. Redesignated at 50 FR 46294, Nov. 7, 1985]

#### Subpart B—National Emission Standards for Radon Emissions From Underground Uranium Mines

SOURCE: 54 FR 51694, Dec. 15, 1989, unless otherwise noted.

#### § 61.20 Designation of facilities.

The provisions of this subpart are applicable to the owner or operator of an active underground uranium mine which:

(a) Has mined, will mine or is designed to mine over 100,000 tons of ore during the life of the mine; or

(b) Has had or will have an annual ore production rate greater than 10,000 tons, unless it can be demonstrated to EPA that the mine will not exceed total ore production of 100,000 tons during the life of the mine.

#### § 61.21 Definitions.

As used in this subpart, all terms not defined here have the meaning given them in the Clean Air Act or subpart A of part 61. The following terms shall have the following specific meanings:

(a) *Active mine* means an underground uranium mine which is being ventilated to allow workers to enter the mine for any purpose.

(b) *Effective dose equivalent* means the sum of the products of absorbed dose and appropriate factors to account for differences in biological effectiveness due to the quality of radiation and its distribution in the body of reference man. The unit of the effective dose

equivalent is the rem. The method for calculating effective dose equivalent and the definition of reference man are outlined in the International Commission on Radiological Protection's Publication No. 26.

(c) *Underground uranium mine* means a man-made underground excavation made for the purpose of removing material containing uranium for the principal purpose of recovering uranium.

#### § 61.22 Standard.

Emissions of radon-222 to the ambient air from an underground uranium mine shall not exceed those amounts that would cause any member of the public to receive in any year an effective dose equivalent of 10 mrem/y.

#### § 61.23 Determining compliance.

(a) Compliance with the emission standard in this subpart shall be determined and the effective dose equivalent calculated by the EPA computer code COMPLY-R. An underground uranium mine owner or operator shall calculate the source terms to be used for input into COMPLY-R by conducting testing in accordance with the procedures described in appendix B, Method 115, or

(b) Owners or operators may demonstrate compliance with the emission standard in this subpart through the use of computer models that are equivalent to COMPLY-R provided that the model has received prior approval from EPA headquarters. EPA may approve a model in whole or in part and may limit its use to specific circumstances.

#### § 61.24 Annual reporting requirements.

(a) The mine owner or operator shall annually calculate and report the results of the compliance calculations in § 61.23 and the input parameters used in making the calculation. Such report shall cover the emissions of a calendar year and shall be sent to EPA by March 31 of the following year. Each report shall also include the following information:

(1) The name and location of the mine.

(2) The name of the person responsible for the operation of the facility and the name of the person preparing the report (if different).

(3) The results of the emissions testing conducted and the dose calculated using the procedures in § 61.23.

(4) A list of the stacks or vents or other points where radioactive materials are released to the atmosphere, including their location, diameter, flow rate, effluent temperature and release height.

(5) A description of the effluent controls that are used on each stack, vent, or other release point and the effluent controls used inside the mine, and an estimate of the efficiency of each control method or device.

(6) Distances from the points of release to the nearest residence, school, business or office and the nearest farms producing vegetables, milk, and meat.

(7) The values used for all other user-supplied input parameters for the computer models (e.g., meteorological data) and the source of these data.

(8) Each report shall be signed and dated by a corporate officer in charge of the facility and contain the following declaration immediately above the signature line: "I certify under penalty of law that I have personally examined and am familiar with the information submitted herein and based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment. See, 18 U.S.C. 1001."

(b) If the facility is not in compliance with the emission standard of § 61.22 in the calendar year covered by the report, the facility must then commence reporting to the Administrator on a monthly basis the information listed in paragraph (a) of this section for the preceding month. These reports will start the month immediately following the submittal of the annual report for the year in noncompliance and will be due 30 days following the end of each month. This increased level of reporting will continue until the Administrator has determined that the monthly reports are no longer necessary. In addition to all the information required in paragraph (a) of this section, monthly reports shall also include the following information:

(1) All controls or other changes in operation of the facility that will be or are being installed to bring the facility into compliance.

(2) If the facility is under a judicial or administrative enforcement decree the report will describe the facilities performance under the terms of the decree.

(c) The first report will cover the emissions of calendar year 1990.

**§61.25 Recordkeeping requirements.**

The owner or operator of a mine must maintain records documenting the source of input parameters including the results of all measurements upon which they are based, the calculations and/or analytical methods used to derive values for input parameters, and the procedure used to determine compliance. In addition, the documentation should be sufficient to allow an independent auditor to verify the accuracy of the determination made concerning the facility's compliance with the standard. These records must be kept at the mine or by the owner or operator for at least five years and upon request be made available for inspection by the Administrator, or his authorized representative.

**§61.26 Exemption from the reporting and testing requirements of 40 CFR 61.10.**

All facilities designated under this subpart are exempt from the reporting requirements of 40 CFR 61.10.

**Subpart C—National Emission Standard for Beryllium**

**§61.30 Applicability.**

The provisions of this subpart are applicable to the following stationary sources:

(a) Extraction plans, ceramic plants, foundries, incinerators, and propellant plants which process beryllium ore, beryllium, beryllium oxide, beryllium alloys, or beryllium-containing waste.

(b) Machine shops which process beryllium, beryllium oxides, or any alloy when such alloy contains more than 5 percent beryllium by weight.

**§61.31 Definitions.**

Terms used in this subpart are defined in the act, in subpart A of this part, or in this section as follows:

(a) *Beryllium* means the element beryllium. Where weights or concentrations are specified, such weights or concentrations apply to beryllium only, excluding the weight or concentration of any associated elements.

(b) *Extraction plant* means a facility chemically processing beryllium ore to beryllium metal, alloy, or oxide, or performing any of the intermediate steps in these processes.

(c) *Beryllium ore* means any naturally occurring material mined or gathered for its beryllium content.

(d) *Machine shop* means a facility performing cutting, grinding, turning, honing, milling, deburring, lapping, electrochemical machining, etching, or other similar operations.

(e) *Ceramic plant* means a manufacturing plant producing ceramic items.

(f) *Foundry* means a facility engaged in the melting or casting of beryllium metal or alloy.

(g) *Beryllium-containing waste* means material contaminated with beryllium and/or beryllium compounds used or generated during any process or operation performed by a source subject to this subpart.

(h) *Incinerator* means any furnace used in the process of burning waste for the primary purpose of reducing the volume of the waste by removing combustible matter.

(i) *Propellant* means a fuel and oxidizer physically or chemically combined which undergoes combustion to provide rocket propulsion.

(j) *Beryllium alloy* means any metal to which beryllium has been added in order to increase its beryllium content and which contains more than 0.1 percent beryllium by weight.

(k) *Propellant plant* means any facility engaged in the mixing, casting, or machining of propellant.

**§61.32 Emission standard.**

(a) Emissions to the atmosphere from stationary sources subject to the provisions of this subpart shall not exceed 10 grams of beryllium over a 24-hour period, except as provided in paragraph (b) of this section.

(b) Rather than meet the requirement of paragraph (a) of this section, an owner or operator may request approval from the Administrator to meet an ambient concentration limit on beryllium in the vicinity of the stationary source of  $0.01 \mu\text{g}/\text{m}^3$ , averaged over a 30-day period.

(1) Approval of such requests may be granted by the Administrator provided that:

(i) At least 3 years of data is available which in the judgment of the Administrator demonstrates that the future ambient concentrations of beryllium in the vicinity of the stationary source will not exceed  $0.01 \mu\text{g}/\text{m}^3$ , averaged over a 30-day period. Such 3-year period shall be the 3 years ending 30 days before the effective date of this standard.

(ii) The owner or operator requests such approval in writing within 30 days after the effective date of this standard.

(iii) The owner or operator submits a report to the Administrator within 45 days after the effective date of this standard which report includes the following information:

(a) Description of sampling method including the method and frequency of calibration.

(b) Method of sample analysis.

(c) Averaging technique for determining 30-day average concentrations.

(d) Number, identity, and location (address, coordinates, or distance and heading from plant) of sampling sites.

(e) Ground elevations and height above ground of sampling inlets.

(f) Plant and sampling area plots showing emission points and sampling sites. Topographic features significantly affecting dispersion including plant building heights and locations shall be included.

(g) Information necessary for estimating dispersion including stack height, inside diameter, exit gas temperature, exit velocity or flow rate, and beryllium concentration.

(h) A description of data and procedures (methods or models) used to design the air sampling network (i.e., number and location of sampling sites).

(i) Air sampling data indicating beryllium concentrations in the vicinity of the stationary source for the 3-year

period specified in paragraph (b)(1) of this section. This data shall be presented chronologically and include the beryllium concentration and location of each individual sample taken by the network and the corresponding 30-day average beryllium concentrations.

(2) Within 60 days after receiving such report, the Administrator will notify the owner or operator in writing whether approval is granted or denied. Prior to denying approval to comply with the provisions of paragraph (b) of this section, the Administrator will consult with representatives of the statutory source for which the demonstration report was submitted.

(c) The burning of beryllium and/or beryllium-containing waste, except propellants, is prohibited except in incinerators, emissions from which must comply with the standard.

#### § 61.33 Stack sampling.

(a) Unless a waiver of emission testing is obtained under § 61.13, each owner or operator required to comply with § 61.32(a) shall test emissions from the source according to Method 104 of appendix B to this part. Method 103 of appendix B to this part is approved by the Administrator as an alternative method for sources subject to § 61.32(a). The emission test shall be performed—

(1) Within 90 days of the effective date in the case of an existing source or a new source which has an initial startup date preceding the effective date; or

(2) Within 90 days of startup in the case of a new source which did not have an initial startup date preceding the effective date.

(b) The Administrator shall be notified at least 30 days prior to an emission test so that he may at his option observe the test.

(c) Samples shall be taken over such a period or periods as are necessary to accurately determine the maximum emissions which will occur in any 24-hour period. Where emissions depend upon the relative frequency of operation of different types of processes, operating hours, operating capacities, or other factors, the calculation of maximum 24-hour-period emissions will be based on that combination of factors which is likely to occur during

§ 61.34

the subject period and which result in the maximum emissions. No changes in the operation shall be made, which would potentially increase emissions above that determined by the most recent source test, until a new emission level has been estimated by calculation and the results reported to the Administrator.

(d) All samples shall be analyzed and beryllium emissions shall be determined within 30 days after the source test. All determinations shall be reported to the Administrator by a registered letter dispatched before the close of the next business day following such determination.

(e) Records of emission test results and other data needed to determine total emissions shall be retained at the source and made available, for inspection by the Administrator, for a minimum of 2 years.

[38 FR 8826, Apr. 6, 1973, as amended at 50 FR 46294, Nov. 7, 1985]

**§ 61.34 Air sampling.**

(a) Stationary sources subject to § 61.32(b) shall locate air sampling sites in accordance with a plan approved by the Administrator. Such sites shall be located in such a manner as is calculated to detect maximum concentrations of beryllium in the ambient air.

(b) All monitoring sites shall be operated continuously except for a reasonable time allowance for instrument maintenance and calibration, for changing filters, or for replacement of equipment needing major repair.

(c) Filters shall be analyzed and concentrations calculated within 30 days after filters are collected. Records of concentrations at all sampling sites and other data needed to determine such concentrations shall be retained at the source and made available, for inspection by the Administrator, for a minimum of 2 years.

(d) Concentrations measured at all sampling sites shall be reported to the Administrator every 30 days by a registered letter.

(e) The Administrator may at any time require changes in, or expansion of, the sampling network.

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**Subpart D—National Emission Standard for Beryllium Rocket Motor Firing**

**§ 61.40 Applicability.**

The provisions of this subpart are applicable to rocket motor test sites.

**§ 61.41 Definitions.**

Terms used in this subpart are defined in the Act, in subpart A of this part, or in this section as follows:

(a) *Rocket motor test site* means any building, structure, facility, or installation where the static test firing of a beryllium rocket motor and/or the disposal of beryllium propellant is conducted.

(b) *Beryllium propellant* means any propellant incorporating beryllium.

**§ 61.42 Emission standard.**

(a) Emissions to the atmosphere from rocket-motor test sites shall not cause time-weighted atmospheric concentrations of beryllium to exceed 75 microgram minutes per cubic meter of air within the limits of 10 to 60 minutes, accumulated during any 2 consecutive weeks, in any area in which an effect adverse to public health could occur.

(b) If combustion products from the firing of beryllium propellant are collected in a closed tank, emissions from such tank shall not exceed 2 grams per hour and a maximum of 10 grams per day.

**§ 61.43 Emission testing—rocket firing or propellant disposal.**

(a) Ambient air concentrations shall be measured during and after firing of a rocket motor or propellant disposal and in such a manner that the effect of these emissions can be compared with the standard. Such sampling techniques shall be approved by the Administrator.

(b) All samples shall be analyzed and results shall be calculated within 30 days after samples are taken and before any subsequent rocket motor firing or propellant disposal at the given site. All results shall be reported to the Administrator by a registered letter dispatched before the close of the next business day following determination of such results.

(c) Records of air sampling test results and other data needed to determine integrated intermittent concentrations shall be retained at the source and made available, for inspection by the Administrator, for a minimum of 2 years.

(d) The Administrator shall be notified at least 30 days prior to an air sampling test, so that he may at his option observe the test.

#### § 61.44 Stack sampling.

(a) Sources subject to § 61.42(b) shall be continuously sampled, during release of combustion products from the tank, according to Method 104 of appendix B to this part. Method 103 of appendix B to this part is approved by the Administrator as an alternative method for sources subject to § 61.42(b).

(b) All samples shall be analyzed, and beryllium emissions shall be determined within 30 days after samples are taken and before any subsequent rocket motor firing or propellant disposal at the given site. All determinations shall be reported to the Administrator by a registered letter dispatched before the close of the next business day following such determinations.

(c) Records of emission test results and other data needed to determine total emissions shall be retained at the source and made available, for inspection by the Administrator, for a minimum of 2 years.

(d) The Administrator shall be notified at least 30 days prior to an emission test, so that he may at his option observe the test.

[38 FR 8826, Apr. 6, 1973, as amended at 50 FR 46294, Nov. 7, 1985]

### Subpart E—National Emission Standard for Mercury

#### § 61.50 Applicability.

The provisions of this subpart are applicable to those stationary sources which process mercury ore to recover mercury, use mercury chlor-alkali cells to produce chlorine gas and alkali metal hydroxide, and incinerate or dry wastewater treatment plant sludge.

[40 FR 48302, Oct. 14, 1975]

#### § 61.51 Definitions.

Terms used in this subpart are defined in the act, in subpart A of this part, or in this section as follows:

(a) *Mercury* means the element mercury, excluding any associated elements, and includes mercury in particulates, vapors, aerosols, and compounds.

(b) *Mercury ore* means a mineral mined specifically for its mercury content.

(c) *Mercury ore processing facility* means a facility processing mercury ore to obtain mercury.

(d) *Condenser stack gases* mean the gaseous effluent evolved from the stack of processes utilizing heat to extract mercury metal from mercury ore.

(e) *Mercury chlor-alkali cell* means a device which is basically composed of an electrolyzer section and a denuder (decomposer) section and utilizes mercury to produce chlorine gas, hydrogen gas, and alkali metal hydroxide.

(f) *Mercury chlor-alkali electrolyzer* means an electrolytic device which is part of a mercury chlor-alkali cell and utilizes a flowing mercury cathode to produce chlorine gas and alkali metal amalgam.

(g) *Denuder* means a horizontal or vertical container which is part of a mercury chlor-alkali cell and in which water and alkali metal amalgam are converted to alkali metal hydroxide, mercury, and hydrogen gas in a short-circuited, electrolytic reaction.

(h) *Hydrogen gas stream* means a hydrogen stream formed in the chlor-alkali cell denuder.

(i) *End box* means a container(s) located on one or both ends of a mercury chlor-alkali electrolyzer which serves as a connection between the electrolyzer and denuder for rich and stripped amalgam.

(j) *End box ventilation system* means a ventilation system which collects mercury emissions from the end-boxes, the mercury pump sumps, and their water collection systems.

(k) *Cell room* means a structure(s) housing one or more mercury electrolytic chlor-alkali cells.

(l) *Sludge* means sludge produced by a treatment plant that processes municipal or industrial waste waters.

(m) *Sludge dryer* means a device used to reduce the moisture content of sludge by heating to temperatures above 65°C (ca. 150°F) directly with combustion gases.

[38 FR 8826, Apr. 6, 1973, as amended at 40 FR 48302, Oct. 14, 1975]

**§ 61.52 Emission standard.**

(a) Emissions to the atmosphere from mercury ore processing facilities and mercury cell chlor-alkali plants shall not exceed 2300 grams of mercury per 24-hour period.

(b) Emissions to the atmosphere from sludge incineration plants, sludge drying plants, or a combination of these that process wastewater treatment plant sludges shall not exceed 3200 grams of mercury per 24-hour period.

[40 FR 48302, Oct. 14, 1975]

**§ 61.53 Stack sampling.**

(a) *Mercury ore processing facility.* (1) Unless a waiver of emission testing is obtained under § 61.13, each owner or operator processing mercury ore shall test emissions from the source according to Method 101 of appendix B to this part. The emission test shall be performed—

(i) Within 90 days of the effective date in the case of an existing source or a new source which has an initial start-up date preceding the effective date; or

(ii) Within 90 days of startup in the case of a new source which did not have an initial startup date preceding the effective date.

(2) The Administrator shall be notified at least 30 days prior to an emission test, so that he may at his option observe the test.

(3) Samples shall be taken over such a period or periods as are necessary to accurately determine the maximum emissions which will occur in a 24-hour period. No changes in the operation shall be made, which would potentially increase emissions above that determined by the most recent source test, until the new emission level has been estimated by calculation and the results reported to the Administrator.

(4) All samples shall be analyzed and mercury emissions shall be determined within 30 days after the stack test.

Each determination shall be reported to the Administrator by a registered letter dispatched within 15 calendar days following the date such determination is completed.

(5) Records of emission test results and other data needed to determine total emissions shall be retained at the source and made available, for inspection by the Administrator, for a minimum of 2 years.

(b) *Mercury chlor-alkali plant—hydrogen and end-box ventilation gas streams.*

(1) Unless a waiver of emission testing is obtained under § 61.13, each owner or operator employing mercury chlor-alkali cell(s) shall test emissions from hydrogen streams according to Method 102 and from end-box ventilation gas streams according to Method 101 of appendix B to this part. The emission test shall be performed—

(i) Within 90 days of the effective date in the case of an existing source or a new source which has an initial startup date preceding the effective date; or

(ii) Within 90 days of startup in the case of a new source which did not have an initial startup date preceding the effective date.

(2) The Administrator shall be notified at least 30 days prior to an emission test, so that he may at his option observe the test.

(3) Samples shall be taken over such a period or periods as are necessary to accurately determine the maximum emissions which will occur in a 24-hour period. No changes in the operation shall be made, which would potentially increase emissions above that determined by the most recent source test, until the new emission has been estimated by calculation and the results reported to the Administrator.

(4) All samples shall be analyzed and mercury emissions shall be determined within 30 days after the stack test. Each determination shall be reported to the Administrator by a registered letter dispatched within 15 calendar days following the date such determination is completed.

(5) Records of emission test results and other data needed to determine total emissions shall be retained at the

source and made available, for inspection by the Administrator, for a minimum of 2 years.

(c) *Mercury chlor-alkali plants—cell room ventilation system.* (1) Stationary sources using mercury chlor-alkali cells may test cell room emissions in accordance with paragraph (c)(2) of this section or demonstrate compliance with paragraph (c)(4) of this section and assume ventilation emissions of 1,300 gms/day of mercury.

(2) Unless a waiver of emission testing is obtained under §61.13, each owner or operator shall pass all cell room air in force gas streams through stacks suitable for testing and shall test emissions from the source according to Method 101 in appendix B to this part. The emission test shall be performed—

(i) Within 90 days of the effective date in the case of an existing source or a new source which has an initial startup date preceding the effective date; or

(ii) Within 90 days of startup in the case of a new source which did not have an initial startup date preceding the effective date.

(3) The Administrator shall be notified at least 30 days prior to an emission test, so that he may at his option observe the test.

(4) An owner or operator may carry out approved design, maintenance, and housekeeping practices. A list of approved practices is provided in appendix A of "Review of National Emission Standards for Mercury," EPA-450/3-84-014a, December 1984. Copies are available from EPA's Central Docket Section, Docket item number A-84-41, III-B-1.

(d) *Sludge incineration and drying plants.* (1) Unless a waiver of emission testing is obtained under §61.13, each owner or operator of a source subject to the standard in §61.52(b) shall test emissions from that source. Such tests shall be conducted in accordance with the procedures set forth either in paragraph (d) of this section or in §61.54.

(2) Method 101A in appendix B to this part shall be used to test emissions as follows:

(i) The test shall be performed within 90 days of the effective date of these regulations in the case of an existing

source or a new source which has an initial startup date preceding the effective date.

(ii) The test shall be performed within 90 days of startup in the case of a new source which did not have an initial startup date preceding the effective date.

(3) The Administrator shall be notified at least 30 days prior to an emission test, so that he may at his option observe the test.

(4) Samples shall be taken over such a period or periods as are necessary to determine accurately the maximum emissions which will occur in a 24-hour period. No changes shall be made in the operation which would potentially increase emissions above the level determined by the most recent stack test, until the new emission level has been estimated by calculation and the results reported to the Administrator.

(5) All samples shall be analyzed and mercury emissions shall be determined within 30 days after the stack test. Each determination shall be reported to the Administrator by a registered letter dispatched within 15 calendar days following the date such determination is completed.

(6) Records of emission test results and other data needed to determine total emissions shall be retained at the source and shall be made available, for inspection by the Administrator, for a minimum of 2 years.

[38 FR 8826, Apr. 6, 1973, as amended at 40 FR 48302, Oct. 14, 1975; 47 FR 24704, June 8, 1982; 50 FR 46294, Nov. 7, 1985; 52 FR 8726, Mar. 19, 1987]

#### §61.54 Sludge sampling.

(a) As an alternative means for demonstrating compliance with §61.52(b), an owner or operator may use Method 105 of appendix B and the procedures specified in this section.

(1) A sludge test shall be conducted within 90 days of the effective date of these regulations in the case of an existing source or a new source which has an initial startup date preceding the effective date; or

(2) A sludge test shall be conducted within 90 days of startup in the case of a new source which did not have an initial startup date preceding the effective date.

(b) The Administrator shall be notified at least 30 days prior to a sludge sampling test, so that he may at his option observe the test.

(c) Sludge shall be sampled according to paragraph (c)(1) of this section, sludge charging rate for the plant shall be determined according to paragraph (c)(2) of this section, and the sludge analysis shall be performed according to paragraph (c)(3) of this section.

(1) The sludge shall be sampled according to Method 105—Determination of Mercury in Wastewater Treatment Plant Sewage Sludges. A total of three composite samples shall be obtained within an operating period of 24 hours. When the 24-hour operating period is not continuous, the total sampling period shall not exceed 72 hours after the first grab sample is obtained. Samples

shall not be exposed to any condition that may result in mercury contamination or loss.

(2) The maximum 24-hour period sludge incineration or drying rate shall be determined by use of a flow rate measurement device that can measure the mass rate of sludge charged to the incinerator or dryer with an accuracy of ±5 percent over its operating range. Other methods of measuring sludge mass charging rates may be used if they have received prior approval by the Administrator.

(3) The sampling, handling, preparation, and analysis of sludge samples shall be accomplished according to Method 105 in appendix B of this part.

(d) The mercury emissions shall be determined by use of the following equation.

$$E_{Hg} = \frac{MQ F_{sm(avg)}}{1000}$$

where:

$E_{Hg}$ =Mercury emissions, g/day.

$M$ =Mercury concentration of sludge on a dry solids basis,  $\mu\text{g/g}$ .

$Q$ =Sludge changing rate, kg/day.

$F_{sm}$ =Weight fraction of solids in the collected sludge after mixing.

1000=Conversion factor,  $\text{kg } \mu\text{g/g}^2$ .

(e) No changes in the operation of a plant shall be made after a sludge test has been conducted which would potentially increase emissions above the level determined by the most recent sludge test, until the new emission level has been estimated by calculation and the results reported to the Administrator.

(f) All sludge samples shall be analyzed for mercury content within 30 days after the sludge sample is collected. Each determination shall be reported to the Administrator by a registered letter dispatched within 15 calendar days following the date such determination is completed.

(g) Records of sludge sampling, charging rate determination and other data needed to determine mercury content of wastewater treatment plant sludges shall be retained at the source and made available, for inspection by

the Administrator, for a minimum of 2 years.

[40 FR 48303, Oct. 14, 1975, as amended at 49 FR 35770, Sept. 12, 1984; 52 FR 8727, Mar. 19, 1987; 53 FR 36972, Sept. 23, 1988]

**§ 61.55 Monitoring of emissions and operations.**

(a) *Wastewater treatment plant sludge incineration and drying plants.* All the sources for which mercury emissions exceed 1,600 g per 24-hour period, demonstrated either by stack sampling according to § 61.53 or sludge sampling according to § 61.54, shall monitor mercury emissions at intervals of at least once per year by use of Method 105 of appendix B or the procedures specified in § 61.53 (d) (2) and (4). The results of monitoring shall be reported and retained according to § 61.53(d) (5) and (6) or § 61.54 (f) and (g).

(b) *Mercury cell chlor-alkali plants—hydrogen and end-box ventilation gas streams.* (1) The owner or operator of each mercury cell chlor-alkali plant shall, within 1 year of the date of publication of these amendments or within 1 year of startup for a plant with initial startup after the date of publication, perform a mercury emission test that demonstrates compliance with the

emission limits in § 61.52, on the hydrogen stream by Reference Method 102 and on the end-box stream by Reference Method 101 for the purpose of establishing limits for parameters to be monitored.

(2) During tests specified in paragraph (b)(1) of this section, the following control device parameters shall be monitored, except as provided in paragraph (c) of this section, and recorded manually or automatically at least once every 15 minutes:

(i) The exit gas temperature from uncontrolled streams;

(ii) The outlet temperature of the gas stream for the final (i.e., the farthest downstream) cooling system when no control devices other than coolers and demisters are used;

(iii) The outlet temperature of the gas stream from the final cooling system when the cooling system is followed by a molecular sieve or carbon adsorber;

(iv) Outlet concentration of available chlorine, pH, liquid flow rate, and inlet gas temperature of chlorinated brine scrubbers and hypochlorite scrubbers;

(v) The liquid flow rate and exit gas temperature for water scrubbers;

(vi) The inlet gas temperature of carbon adsorption systems; and

(vii) The temperature during the heating phase of the regeneration cycle for carbon adsorbers or molecular sieves.

(3) The recorded parameters in paragraphs (b)(2)(i) through (b)(2)(vi) of this section shall be averaged over the test period (a minimum of 6 hours) to provide an average number. The highest temperature reading that is measured in paragraph (b)(2)(vii) of this section is to be identified as the reference temperature for use in paragraph (b)(6)(ii) of this section.

(4)(i) Immediately following completion of the emission tests specified in paragraph (b)(1) of this section, the owner or operator of a mercury cell chlor-alkali plant shall monitor and record manually or automatically at least once per hour the same parameters specified in paragraphs (b)(2)(i) through (b)(2)(vi) of this section.

(ii) Immediately following completion of the emission tests specified in paragraph (b)(1) of this section, the

owner or operator shall monitor and record manually or automatically, during each heating phase of the regeneration cycle, the temperature specified in paragraph (b)(2)(vii) of this section.

(5) Monitoring devices used in accordance with paragraphs (b)(2) and (b)(4) of this section shall be certified by their manufacturer to be accurate to within 10 percent, and shall be operated, maintained, and calibrated according to the manufacturer's instructions. Records of the certifications and calibrations shall be retained at the chlor-alkali plant and made available for inspection by the Administrator as follows: Certification, for as long as the device is used for this purpose; calibration for a minimum of 2 years.

(6)(i) When the hourly value of a parameter monitored in accordance with paragraph (b)(4)(i) of this section exceeds, or in the case of liquid flow rate and available chlorine falls below the value of that same parameter determined in paragraph (b)(2) of this section for 24 consecutive hours, the Administrator is to be notified within the next 10 days.

(ii) When the maximum hourly value of the temperature measured in accordance with paragraph (b)(4)(ii) of this section is below the reference temperature recorded according to paragraph (b)(3) of this section for three consecutive regeneration cycles, the Administrator is to be notified within the next 10 days.

(7) Semiannual reports shall be submitted to the Administrator indicating the time and date on which the hourly value of each parameter monitored according to paragraphs (b)(4)(i) and (b)(4)(ii) of this section fell outside the value of that same parameter determined under paragraph (b)(3) of this section; and corrective action taken, and the time and date of the corrective action. Parameter excursions will be considered unacceptable operation and maintenance of the emission control system. In addition, while compliance with the emission limits is determined primarily by conducting a performance test according to the procedures in § 61.53(b), reports of parameter excursions may be used as evidence in judging the duration of a violation that is determined by a performance test.

(8) Semiannual reports required in paragraph (b)(7) of this section shall be submitted to the Administrator on September 15 and March 15 of each year. The first semiannual report is to be submitted following the first full 6 month reporting period. The semiannual report due on September 15 (March 15) shall include all excursions monitored through August 31 (February 28) of the same calendar year.

(c) As an alternative to the monitoring, recordkeeping, and reporting requirements in paragraphs (b)(2) through (8) of this section, an owner or operator may develop and submit for the Administrator's review and approval a plant-specific monitoring plan. To be approved, such a plan must ensure not only compliance with the emission limits of § 61.52(a) but also proper operation and maintenance of emissions control systems. Any site-specific monitoring plan submitted must, at a minimum, include the following:

(1) Identification of the critical parameter or parameters for the hydrogen stream and for the end-box ventilation stream that are to be monitored and an explanation of why the critical parameter(s) selected is the best indicator of proper control system performance and of mercury emission rates.

(2) Identification of the maximum or minimum value of each parameter (e.g., degrees temperature, concentration of mercury) that is not to be exceeded. The level(s) is to be directly correlated to the results of a performance test, conducted no more than 180 days prior to submittal of the plan, when the facility was in compliance with the emission limits of § 61.52(a).

(3) Designation of the frequency for recording the parameter measurements, with justification if the frequency is less than hourly. A longer recording frequency must be justified on the basis of the amount of time that could elapse during periods of process or control system upsets before the emission limits would be exceeded, and consideration is to be given to the time that would be necessary to repair the failure.

(4) Designation of the immediate actions to be taken in the event of an ex-

cursion beyond the value of the parameter established in 2.

(5) Provisions for reporting, semi-annually, parameter excursions and the corrective actions taken, and provisions for reporting within 10 days any significant excursion.

(6) Identification of the accuracy of the monitoring device(s) or of the readings obtained.

(7) Recordkeeping requirements for certifications and calibrations.

(d) *Mercury cell chlor-alkali plants—cell room ventilation system.* (1) Stationary sources determining cell room emissions in accordance with § 61.53(c)(4) shall maintain daily records of all leaks or spills of mercury. The records shall indicate the amount, location, time, and date the leaks or spills occurred, identify the cause of the leak or spill, state the immediate steps taken to minimize mercury emissions and steps taken to prevent future occurrences, and provide the time and date on which corrective steps were taken.

(2) The results of monitoring shall be recorded, retained at the source, and made available for inspection by the Administrator for a minimum of 2 years.

[52 FR 8727, Mar. 19, 1987]

#### § 61.56 Delegation of authority.

(a) In delegating implementation and enforcement authority to a State under section 112(d) of the Act, the authorities contained in paragraph (b) of this section shall be retained by the Administrator and not transferred to a State.

(b) Authorities which will not be delegated to States: Sections 61.53(c)(4) and 61.55(d). The authorities not delegated to States listed are in addition to the authorities in the General Provisions, subpart A of 40 CFR part 61, that will not be delegated to States (§§ 61.04(b), 61.12(d)(1), and 61.13(h)(1)(ii)).

[52 FR 8728, Mar. 19, 1987]

#### Subpart F—National Emission Standard for Vinyl Chloride

SOURCE: 41 FR 46564, Oct. 21, 1976, unless otherwise noted.

**§ 61.60 Applicability.**

(a) This subpart applies to plants which produce:

(1) Ethylene dichloride by reaction of oxygen and hydrogen chloride with ethylene,

(2) Vinyl chloride by any process, and/or

(3) One or more polymers containing any fraction of polymerized vinyl chloride.

(b) This subpart does not apply to equipment used in research and development if the reactor used to polymerize the vinyl chloride processed in the equipment has a capacity of no more than 0.19 m<sup>3</sup> (50 gal).

(c) Sections of this subpart other than §§ 61.61; 61.64 (a)(1), (b), (c), and (d); 61.67; 61.68; 61.69; 61.70; and 61.71 do not apply to equipment used in research and development if the reactor used to polymerize the vinyl chloride processed in the equipment has a capacity of greater than 0.19 m<sup>3</sup> (50 gal) and no more than 4.17 m<sup>3</sup> (1100 gal).

[41 FR 46564, Oct. 21, 1976, as amended at 42 FR 29006, June 7, 1977; 53 FR 36972, Sept. 23, 1988; 57 FR 60999, Dec. 23, 1992]

**§ 61.61 Definitions.**

Terms used in this subpart are defined in the Act, in subpart A of this part, or in this section as follows:

(a) *Ethylene dichloride plant* includes any plant which produces ethylene dichloride by reaction of oxygen and hydrogen chloride with ethylene.

(b) *Vinyl chloride plant* includes any plant which produces vinyl chloride by any process.

(c) *Polyvinyl chloride plant* includes any plant where vinyl chloride alone or in combination with other materials is polymerized.

(d) *Slip gauge* means a gauge which has a probe that moves through the gas/liquid interface in a storage or transfer vessel and indicates the level of vinyl chloride in the vessel by the physical state of the material the gauge discharges.

(e) *Type of resin* means the broad classification of resin referring to the basic manufacturing process for producing that resin, including, but not limited to, the suspension, dispersion, latex, bulk, and solution processes.

(f) *Grade of resin* means the subdivision of resin classification which describes it as a unique resin, i.e., the most exact description of a resin with no further subdivision.

(g) *Dispersion resin* means a resin manufactured in such a way as to form fluid dispersions when dispersed in a plasticizer or plasticizer/diluent mixtures.

(h) *Latex resin* means a resin which is produced by a polymerization process which initiates from free radical catalyst sites and is sold undried.

(i) *Bulk resin* means a resin which is produced by a polymerization process in which no water is used.

(j) *Inprocess wastewater* means any water which, during manufacturing or processing, comes into direct contact with vinyl chloride or polyvinyl chloride or results from the production or use of any raw material, intermediate product, finished product, by-product, or waste product containing vinyl chloride or polyvinyl chloride but which has not been discharged to a wastewater treatment process or discharged untreated as wastewater. Gasholder seal water is not inprocess wastewater until it is removed from the gasholder.

(k) *Wastewater treatment process* includes any process which modifies characteristics such as BOD, COD, TSS, and pH, usually for the purpose of meeting effluent guidelines and standards; it does not include any process the purpose of which is to remove vinyl chloride from water to meet requirements of this subpart.

(l) *In vinyl chloride service* means that a piece of equipment either contains or contacts a liquid that is at least 10 percent vinyl chloride by weight or a gas that is at least 10 percent by volume vinyl chloride as determined according to the provisions of § 61.67(h). The provisions of § 61.67(h) also specify how to determine that a piece of equipment is not in vinyl chloride service. For the purposes of this subpart, this definition must be used in place of the definition of "in VHAP service" in subpart V of this part.

(m) *Standard operating procedure* means a formal written procedure officially adopted by the plant owner or operator and available on a routine

basis to those persons responsible for carrying out the procedure.

(n) *Run* means the net period of time during which an emission sample is collected.

(o) *Ethylene dichloride purification* includes any part of the process of ethylene dichloride purification following ethylene dichloride formation, but excludes crude, intermediate, and final ethylene dichloride storage tanks.

(p) *Vinyl chloride purification* includes any part of the process of vinyl chloride production which follows vinyl chloride formation.

(q) *Reactor* includes any vessel in which vinyl chloride is partially or totally polymerized into polyvinyl chloride.

(r) *Reactor opening loss* means the emissions of vinyl chloride occurring when a reactor is vented to the atmosphere for any purpose other than an emergency relief discharge as defined in § 61.65(a).

(s) *Stripper* includes any vessel in which residual vinyl chloride is removed from polyvinyl chloride resin, except bulk resin, in the slurry form by the use of heat and/or vacuum. In the case of bulk resin, stripper includes any vessel which is used to remove residual vinyl chloride from polyvinyl chloride resin immediately following the polymerization step in the plant process flow.

(t) *Standard temperature* means a temperature of 20° C (69° F).

(u) *Standard pressure* means a pressure of 760 mm of Hg (29.92 in. of Hg).

(v) *Relief valve* means each pressure relief device including pressure relief valves, rupture disks and other pressure relief systems used to protect process components from overpressure conditions. "Relief valve" does not include polymerization shortstop systems, refrigerated water systems or control valves or other devices used to control flow to an incinerator or other air pollution control device.

(w) *Leak* means any of several events that indicate interruption of confinement of vinyl chloride within process equipment. Leaks include events regulated under subpart V of this part such as:

(1) An instrument reading of 10,000 ppm or greater measured according to

Method 21 (see appendix A of 40 CFR part 60);

(2) A sensor detection of failure of a seal system, failure of a barrier fluid system, or both;

(3) Detectable emissions as indicated by an instrument reading of greater than 500 ppm above background for equipment designated for no detectable emissions measured according to Test Method 21 (see appendix A of 40 CFR part 60); and

(4) In the case of pump seals regulated under § 61.242-2, indications of liquid dripping constituting a leak under § 61.242-2.

Leaks also include events regulated under § 61.65(b)(8)(i) for detection of ambient concentrations in excess of background concentrations. A relief valve discharge is not a leak.

(x) *Exhaust gas* means any offgas (the constituents of which may consist of any fluids, either as a liquid and/or gas) discharged directly or ultimately to the atmosphere that was initially contained in or was in direct contact with the equipment for which gas limits are prescribed in §§ 61.62(a) and (b); 61.63(a); 61.64 (a)(1), (b), (c), and (d); 61.65 (b)(1)(ii), (b)(2), (b)(3), (b)(5), (b)(6)(ii), (b)(7), and (b)(9)(ii); and 61.65(d). A leak as defined in paragraph (w) of this section is not an exhaust gas. Equipment which contains exhaust gas is subject to § 61.65(b)(8), whether or not that equipment contains 10 percent by volume vinyl chloride.

(y) *Relief valve discharge* means any nonleak discharge through a relief valve.

(z) *3-hour period* means any three consecutive 1-hour periods (each commencing on the hour), provided that the number of 3-hour periods during which the vinyl chloride concentration exceeds 10 ppm does not exceed the number of 1-hour periods during which the vinyl chloride concentration exceeds 10 ppm.

[41 FR 46564, Oct. 21, 1976, as amended at 42 FR 29006, June 7, 1977; 51 FR 34908, Sept. 30, 1986; 55 FR 28348, July 10, 1990]

#### § 61.62 Emission standard for ethylene dichloride plants.

(a) *Ethylene dichloride purification*. The concentration of vinyl chloride in each exhaust gas stream from any

equipment used in ethylene dichloride purification is not to exceed 10 ppm (average for 3-hour period), except as provided in § 61.65(a). This requirement does not preclude combining of exhaust gas streams provided the combined steam is ducted through a control system from which the concentration of vinyl chloride in the exhaust gases does not exceed 10 ppm, or equivalent as provided in § 61.66. This requirement does not apply to equipment that has been opened, is out of operation, and met the requirement in § 61.65(b)(6)(i) before being opened.

(b) *Oxychlorination reactor.* Except as provided in § 61.65(a), emissions of vinyl chloride to the atmosphere from each oxychlorination reactor are not to exceed 0.2 g/kg (0.0002 lb/lb) (average for 3-hour period) of the 100 percent ethylene dichloride product from the oxychlorination process.

[51 FR 34909, Sept. 30, 1986]

#### **§ 61.63 Emission standard for vinyl chloride plants.**

An owner or operator of a vinyl chloride plant shall comply with the requirements of this section and § 61.65.

(a) Vinyl chloride formation and purification: The concentration of vinyl chloride in each exhaust gas stream from any equipment used in vinyl chloride formation and/or purification is not to exceed 10 ppm (average for 3-hour period), except as provided in § 61.65(a). This requirement does not preclude combining of exhaust gas streams provided the combined steam is ducted through a control system from which the concentration of vinyl chloride in the exhaust gases does not exceed 10 ppm, or equivalent as provided in § 61.66. This requirement does not apply to equipment that has been opened, is out of operation, and met the requirement in § 61.65(b)(6)(i) before being opened.

[51 FR 34909, Sept. 30, 1986]

#### **§ 61.64 Emission standard for polyvinyl chloride plants.**

An owner or operator of a polyvinyl chloride plant shall comply with the requirements of this section and § 61.65.

(a) *Reactor.* The following requirements apply to reactors:

(1) The concentration of vinyl chloride in each exhaust gas stream from each reactor is not to exceed 10 ppm (average for 3-hour period), except as provided in paragraph (a)(2) of this section and § 61.65(a).

(2) The reactor opening loss from each reactor is not to exceed 0.02 g vinyl chloride/kg (0.00002 lb vinyl chloride/lb) of polyvinyl chloride product, except as provided in paragraph (f)(1) of this section, with the product determined on a dry solids basis. This requirement does not apply to prepolymerization reactors in the bulk process. This requirement does apply to postpolymerization reactors in the bulk process, where the product means the gross product of prepolymerization and postpolymerization.

(3) Manual vent valve discharge. Except for an emergency manual vent valve discharge, there is to be no discharge to the atmosphere from any manual vent valve on a polyvinyl chloride reactor in vinyl chloride service. An emergency manual vent valve discharge means a discharge to the atmosphere which could not have been avoided by taking measures to prevent the discharge. Within 10 days of any discharge to the atmosphere from any manual vent valve, the owner or operator of the source from which the discharge occurs shall submit to the Administrator a report in writing containing information on the source, nature and cause of the discharge, the date and time of the discharge, the approximate total vinyl chloride loss during the discharge, the method used for determining the vinyl chloride loss (the calculation of the vinyl chloride loss), the action that was taken to prevent the discharge, and measures adopted to prevent future discharges.

(b) *Stripper.* The concentration of vinyl chloride in each exhaust gas stream from each stripper is not to exceed 10 ppm (average for 3-hour period), except as provided in § 61.65(a). This requirement does not apply to equipment that has been opened, is out of operation, and met the requirement in § 61.65(b)(6)(i) before being opened.

(c) *Mixing, weighing, and holding containers.* The concentration of vinyl chloride in each exhaust gas stream from each mixing, weighing, or holding

container in vinyl chloride service which precedes the stripper (or the reactor if the plant has no stripper) in the plant process flow is not to exceed 10 ppm (average for 3-hour period), except as provided in §61.65(a). This requirement does not apply to equipment that has been opened, is out of operation, and met the requirement in §61.65(b)(6)(i) before being opened.

(d) *Monomer recovery system.* The concentration of vinyl chloride in each exhaust gas stream from each monomer recovery system is not to exceed 10 ppm (average for 3-hour period), except as provided in §61.65(a). This requirement does not apply to equipment that has been opened, is out of operation, and met the requirement in §61.65(b)(6)(i) before being opened.

(e) *Sources following the stripper(s).* The following requirements apply to emissions of vinyl chloride to the atmosphere from the combination of all sources following the stripper(s) [or the reactor(s) if the plant has no stripper(s)] in the plant process flow including but not limited to, centrifuges, concentrators, blend tanks, filters, dryers, conveyor air discharges, baggers, storage containers, and inprocess wastewater, except as provided in paragraph (f) of this section:

(1) In polyvinyl chloride plants using stripping technology to control vinyl chloride emissions, the weighted average residual vinyl chloride concentration in all grades of polyvinyl chloride resin processed through the stripping operation on each calendar day, measured immediately after the stripping operation is completed, may not exceed:

(i) 2000 ppm for polyvinyl chloride dispersion resins, excluding latex resins;

(ii) 400 ppm for all other polyvinyl chloride resins, including latex resins, averaged separately for each type of resin; or

(2) In polyvinyl chloride plants controlling vinyl chloride emissions with technology other than stripping or in addition to stripping, emissions of vinyl chloride to the atmosphere may not exceed:

(i) 2 g/kg (0.002 lb/lb) product from the stripper(s) [or reactor(s) if the plant has no stripper(s)] for dispersion poly-

vinyl chloride resins, excluding latex resins, with the product determined on a dry solids basis;

(ii) 0.4 g/kg (0.0004 lb/lb) product from the strippers [or reactor(s) if the plant has no stripper(s)] for all other polyvinyl chloride resins, including latex resins, with the product determined on a dry solids basis.

(3) The provisions of this paragraph apply at all times including when off-specification or other types of resins are made.

(f) *Reactor used as stripper.* When a nonbulk resin reactor is used as a stripper this paragraph may be applied in lieu of §61.64 (a)(2) and (e)(1):

(1) The weighted average emissions of vinyl chloride from reactor opening loss and all sources following the reactor used as a stripper from all grades of polyvinyl chloride resin stripped in the reactor on each calendar day may not exceed:

(i) 2.02 g/kg (0.00202 lb/lb) of polyvinyl chloride product for dispersion polyvinyl chloride resins, excluding latex resins, with the product determined on a dry solids basis.

(ii) 0.42 g/kg (0.00042 lb/lb) of polyvinyl chloride product for all other polyvinyl chloride resins, including latex resins, with the product determined on a dry solids basis.

[41 FR 46564, Oct. 21, 1976, as amended at 51 FR 34909, Sept. 30, 1986; 53 FR 36972, Sept. 23, 1988]

**§61.65 Emission standard for ethylene dichloride, vinyl chloride and polyvinyl chloride plants.**

An owner or operator of an ethylene dichloride, vinyl chloride, and/or polyvinyl chloride plant shall comply with the requirements of this section.

(a) *Relief valve discharge.* Except for an emergency relief discharge, and except as provided in §61.65(d), there is to be no discharge to the atmosphere from any relief valve on any equipment in vinyl chloride service. An emergency relief discharge means a discharge which could not have been avoided by taking measures to prevent the discharge. Within 10 days of any relief valve discharge, except for those subject to §61.65(d), the owner or operator of the source from which the relief valve discharge occurs shall submit to

the Administrator a report in writing containing information on the source, nature and cause of the discharge, the date and time of the discharge, the approximate total vinyl chloride loss during the discharge, the method used for determining the vinyl chloride loss (the calculation of the vinyl chloride loss), the action that was taken to prevent the discharge, and measures adopted to prevent future discharges.

(b) *Fugitive emission sources*—(1) *Loading and unloading lines*. Vinyl chloride emissions from loading and unloading lines in vinyl chloride service which are opened to the atmosphere after each loading or unloading operation are to be minimized as follows:

(i) After each loading or unloading operation and before opening a loading or unloading line to the atmosphere, the quantity of vinyl chloride in all parts of each loading or unloading line that are to be opened to the atmosphere is to be reduced so that the parts combined contain no greater than 0.0038 m<sup>3</sup> (0.13 ft<sup>3</sup>) of vinyl chloride, at standard temperature and pressure; and

(ii) Any vinyl chloride removed from a loading or unloading line in accordance with paragraph (b)(1)(i) of this section is to be ducted through a control system from which the concentration of vinyl chloride in the exhaust gases does not exceed 10 ppm (average for 3-hour period), or equivalent as provided in §61.66.

(2) *Slip gauges*. During loading or unloading operations, the vinyl chloride emissions from each slip gauge in vinyl chloride service are to be minimized by ducting any vinyl chloride discharged from the slip gauge through a control system from which the concentration of vinyl chloride in the exhaust gases does not exceed 10 ppm (average for 3-hour period), or equivalent as provided in §61.66.

(3) Leakage from pump, compressor, and agitator seals:

(i) *Rotating pumps*. Vinyl chloride emissions from seals on all rotating pumps in vinyl chloride service are to be minimized by installing sealless pumps, pumps with double mechanical seals or equivalent as provided in §61.66. If double mechanical seals are used, vinyl chloride emissions from the

seals are to be minimized by maintaining the pressure between the two seals so that any leak that occurs is into the pump; by ducting any vinyl chloride between the two seals through a control system from which the concentration of vinyl chloride in the exhaust gases does not exceed 10 ppm; or equivalent as provided in §61.66. Compliance with the provisions of 40 CFR part 61 subpart V demonstrates compliance with the provisions of this paragraph.

(ii) *Reciprocating pumps*. Vinyl chloride emissions from seals on all reciprocating pumps in vinyl chloride service are to be minimized by installing double outboard seals, or equivalent as provided in §61.66. If double outboard seals are used, vinyl chloride emissions from the seals are to be minimized by maintaining the pressure between the two seals so that any leak that occurs is into the pump; by ducting any vinyl chloride between the two seals through a control system from which the concentration of vinyl chloride in the exhaust gases does not exceed 10 ppm; or equivalent as provided in §61.66. Compliance with the provisions of 40 CFR part 61 subpart V demonstrates compliance with the provisions of this paragraph.

(iii) *Rotating compressor*. Vinyl chloride emissions from seals on all rotating compressors in vinyl chloride service are to be minimized by installing compressors with double mechanical seals, or equivalent as provided in §61.66. If double mechanical seals are used, vinyl chloride emissions from the seals are to be minimized by maintaining the pressure between the two seals so that any leak that occurs is into the compressor; by ducting any vinyl chloride between the two seals through a control system from which the concentration of vinyl chloride in the exhaust gases does not exceed 10 ppm; or equivalent as provided in §61.66. Compliance with the provisions of 40 CFR part 61 subpart V demonstrates compliance with the provisions of this paragraph.

(iv) *Reciprocating compressors*. Vinyl chloride emissions from seals on all reciprocating compressors in vinyl chloride service are to be minimized by installing double outboard seals, or

equivalent as provided in § 61.66. If double outboard seals are used, vinyl chloride emissions from the seals are to be minimized by maintaining the pressure between the two seals so that any leak that occurs is into the compressor; by ducting any vinyl chloride between the two seals through a control system from which concentration of vinyl chloride in the exhaust gases does not exceed 10 ppm; or equivalent as provided in § 61.66. Compliance with the provisions of 40 CFR part 61 subpart V demonstrates compliance with the provisions of this paragraph.

(v) *Agitator.* Vinyl chloride emissions from seals on all agitators in vinyl chloride service are to be minimized by installing agitators with double mechanical seals, or equivalent as provided in § 61.66. If double mechanical seals are used, vinyl chloride emissions from the seals are to be minimized by maintaining the pressure between the two seals so that any leak that occurs is into the agitated vessel; by ducting any vinyl chloride between the two seals through a control system from which the concentration of vinyl chloride in the exhaust gases does not exceed 10 ppm; or equivalent as provided in § 61.66.

(4) *Leaks from relief valves.* Vinyl chloride emissions due to leaks from each relief valve on equipment in vinyl chloride service shall comply with § 61.242-4 of subpart V of this part.

(5) *Manual venting of gases.* Except as provided in § 61.64(a)(3), all gases which are manually vented from equipment in vinyl chloride service are to be ducted through a control system from which the concentration of vinyl chloride in the exhaust gases does not exceed 10 ppm (average for 3-hour period); or equivalent as provided in § 61.66.

(6) *Opening of equipment.* Vinyl chloride emissions from opening of equipment (excluding crude, intermediate, and final EDC storage tanks, but including prepolymerization reactors used in the manufacture of bulk resins and loading or unloading lines that are not opened to the atmosphere after each loading or unloading operation) are to be minimized follows:

(i) Before opening any equipment for any reason, the quantity of vinyl chloride which is contained therein is to be

reduced to an amount which occupies a volume of no more than 2.0 percent of the equipment's containment volume or 0.0950 cubic meters (25 gallons), whichever is larger, at standard temperature and pressure.

(ii) Any vinyl chloride removed from the equipment in accordance with paragraph (b)(6)(i) of this section is to be ducted through a control system from which the concentration of vinyl chloride in the exhaust gases does not exceed 10 ppm (average for 3-hour period); or equivalent as provided in § 61.66.

(7) *Samples.* Unused portions of samples containing at least 10 percent by weight vinyl chloride are to be returned to the process or destroyed in a control device from which concentration of vinyl chloride in the exhaust gas does not exceed 10 ppm (average for 3-hour period) or equivalent as provided in § 61.66. Sampling techniques are to be such that sample containers in vinyl chloride service are purged into a closed process system. Compliance with the provisions of 40 CFR part 61 subpart V demonstrates compliance with the provisions of this paragraph.

(8) *Leak detection and elimination.* Vinyl chloride emissions due to leaks from equipment in vinyl chloride service are to be minimized as follows:

(i) A reliable and accurate vinyl chloride monitoring system shall be operated for detection of major leaks and identification of the general area of the plant where a leak is located. A vinyl chloride monitoring system means a device which obtains air samples from one or more points on a continuous sequential basis and analyzes the samples with gas chromatography or, if the owner or operator assumes that all hydrocarbons measured are vinyl chloride, with infrared spectrophotometry, flame ion detection, or an equivalent or alternative method. The vinyl chloride monitoring system shall be operated according to a program developed by the plant owner or operator. The owner or operator shall submit a description of the program to the Administrator within 45 days of the effective date of these regulations, unless a waiver of compliance is granted under § 61.11, or the program has been approved and the Administrator does not

request a review of the program. Approval of a program will be granted by the Administrator provided he finds:

(A) The location and number of points to be monitored and the frequency of monitoring provided for in the program are acceptable when they are compared with the number of pieces of equipment in vinyl chloride service and size and physical layout of the plant.

(B) It contains a definition of leak which is acceptable when compared with the background concentrations of vinyl chloride in the areas of the plant to be monitored by the vinyl chloride monitoring system. Measurements of background concentrations of vinyl chloride in the areas of the plant to be monitored by the vinyl chloride monitoring system are to be included with the description of the program. The definition of leak for a given plant may vary among the different areas within the plant and is also to change over time as background concentrations in the plant are reduced.

(C) It contains an acceptable plan of action to be taken when a leak is detected.

(D) It provides for an acceptable calibration and maintenance schedule for the vinyl chloride monitoring system and portable hydrocarbon detector. For the vinyl chloride monitoring system, a daily span check is to be conducted with a concentration of vinyl chloride equal to the concentration defined as a leak according to paragraph (b)(8)(i)(B) of this section. The calibration is to be done with either:

(1) A calibration gas mixture prepared from the gases specified in sections 5.2.1. and 5.2.2. of Test Method 106 and in accordance with section 7.1 of Test Method 106, or

(2) A calibration gas cylinder standard containing the appropriate concentration of vinyl chloride. The gas composition of the calibration gas cylinder standard is to have been certified by the manufacturer. The manufacturer must have recommended a maximum shelf life for each cylinder so that the concentration does not change greater than  $\pm 5$  percent from the certified value. The date of gas cylinder preparation, certified vinyl chloride concentration, and recommended maxi-

mum self life must have been affixed to the cylinder before shipment from the manufacturer to the buyer. If a gas chromatograph is used as the vinyl chloride monitoring system, these gas mixtures may be directly used to prepare a chromatograph calibration curve as described in section 7.3 of Test Method 106. The requirements in section 5.2.3.1. and 5.2.3.2. of Test Method 106 for certification of cylinder standards and for establishment and verification of calibration standards are to be followed.

(ii) For each process unit subject to this subpart, a formal leak detection and repair program shall be implemented consistent with subpart V of this part, except as provided in paragraph (b)(8)(iii) of this section. This program is to be implemented within 90 days of the effective date of these regulations, unless a waiver of compliance is granted under § 61.11. Except as provided in paragraph (b)(8)(ii)(E) of this section, an owner or operator shall be exempt from § 61.242-1(d), § 61.242-7 (a), (b), and (c), § 61.246, and § 61.247 of subpart V of this part for any process unit in which the percentage of leaking valves is demonstrated to be less than 2.0 percent, as determined in accordance with the following:

(A) A performance test as specified in paragraph (b)(8)(ii)(B) of this section shall be conducted initially within 90 days of the effective date of these regulations, annually, and at times requested by the Administrator.

(B) For each performance test, a minimum of 200 or 90 percent, whichever is less, of the total valves in VOC service (as defined in § 60.481 of subpart VV of part 60) within the process unit shall be randomly selected and monitored within 1 week by the methods specified in § 61.245(b) of this part. If an instrument reading of 10,000 ppm or greater is measured, a leak is detected. The leak percentage shall be determined by dividing the number of valves in VOC service for which leaks are detected by the number of tested valves in VOC service.

(C) If a leak is detected, it shall be repaired in accordance with § 61.242-7 (d) and (e) of subpart V of this part.

(D) The results of the performance test shall be submitted in writing to

the Administrator in the first quarterly report following the performance test as part of the reporting requirements of § 61.70.

(E) Any process unit in which the percentage of leaking valves is found to be greater than 2.0 percent according to the performance test prescribed in paragraph (b)(8)(ii)(B) of this section must comply with all provisions of subpart V of this part within 90 days.

(iii) Open-ended valves or lines located on multiple service process lines which operate in vinyl chloride service less than 10 percent of the time are exempt from the requirements of § 61.242-6 of subpart V, provided the open-ended valves or lines are addressed in the monitoring system required by paragraph (b)(8)(i) of this section. The Administrator may apply this exemption to other existing open-ended valves or lines that are demonstrated to require significant retrofit cost to comply with the requirements of § 61.242-6 of subpart V.

(9) *Inprocess wastewater.* Vinyl chloride emissions to the atmosphere from inprocess wastewater are to be reduced as follows:

(i) The concentration of vinyl chloride in each inprocess wastewater stream containing greater than 10 ppm vinyl chloride measured immediately as it leaves a piece of equipment and before being mixed with any other inprocess wastewater stream is to be reduced to no more than 10 ppm by weight before being mixed with any other inprocess wastewater stream which contains less than 10 ppm vinyl chloride; before being exposed to the atmosphere; before being discharged to a wastewater treatment process; or before being discharged untreated as a wastewater. This paragraph does apply to water which is used to displace vinyl chloride from equipment before it is opened to the atmosphere in accordance with § 61.64(a)(2) or paragraph (b)(6) of this section, but does not apply to water which is used to wash out equipment after the equipment has already been opened to the atmosphere in accordance with § 61.64(a)(2) or paragraph (b)(6) of this section.

(ii) Any vinyl chloride removed from the inprocess wastewater in accordance with paragraph (b)(9)(i) of this section

is to be ducted through a control system from which the concentration of vinyl chloride in the exhaust gases does not exceed 10 ppm (average for 3-hour period); or equivalent as provided in § 61.66.

(c) The requirements in paragraphs (b)(1), (b)(2), (b)(5), (b)(6), (b)(7) and (b)(8) of this section are to be incorporated into a standard operating procedure, and made available upon request for inspection by the Administrator. The standard operating procedure is to include provisions for measuring the vinyl chloride in equipment 4.75 m<sup>3</sup> (1255 gal) in volume for which an emission limit is prescribed in § 61.65(b)(6)(i) after opening the equipment and using Test Method 106, a portable hydrocarbon detector, or an alternative method. The method of measurement is to meet the requirements in § 61.67(g)(5)(i)(A) or (g)(5)(i)(B).

(d) A RVD that is ducted to a control device that is continually operating while emissions from the release are present at the device is subject to the following requirements:

(1) A discharge from a control device other than a flare shall not exceed 10 ppm (average over a 3-hour period) as determined by the continuous emission monitor system required under § 61.68. Such a discharge is subject to the requirements of § 61.70.

(2) For a discharge routed to a flare, the flare shall comply with the requirements of § 60.18.

(i) Flare operations shall be monitored in accordance with the requirements of §§ 60.18(d) and 60.18(f)(2). For the purposes of § 60.18(d), the volume and component concentration of each relief valve discharge shall be estimated and calculation shall be made to verify ongoing compliance with the design and operating requirements of §§ 60.18 (c)(3) through (c)(6). If more than one relief valve is discharged simultaneously to a single flare, these calculations shall account for the cumulative effect of all such relief valve discharges. These calculations shall be made and reported quarterly for all discharges within the quarter. Failure to comply with any of the requirements of this paragraph will be a violation of

§ 61.65(d)(2). Monitoring for the presence of a flare pilot flame shall be conducted in accordance with § 60.18(f)(2). If the results of this monitoring or any other information shows that the pilot flame is not present 100 percent of the time during which a relief valve discharge is routed to the flare, the relief valve discharge is subject to the provisions of § 61.65(a).

(ii) A report describing the flare design shall be provided to the Administrator not later than 90 days after the adoption of this provision or within 30 days of the installation of a flare system for control of relief valve discharge whichever is later. The flare design report shall include calculations based upon expected relief valve discharge component concentrations and net heating values (for PVC this calculation shall be based on values expected if a release occurred at the instant the polymerization starts); and estimated maximum exit velocities based upon the design throat capacity of the gas in the relief valve.

[41 FR 46564, Oct. 21, 1976; 41 FR 53017, Dec. 3, 1976, as amended at 42 FR 29006, June 7, 1977; 51 FR 34910, Sept. 30, 1986; 53 FR 36972, Sept. 23, 1988; 55 FR 28348, July 10, 1990]

#### § 61.66 Equivalent equipment and procedures.

Upon written application from an owner or operator, the Administrator may approve use of equipment or procedures which have been demonstrated to his satisfaction to be equivalent in terms of reducing vinyl chloride emissions to the atmosphere to those prescribed for compliance with a specific paragraph of this subpart.

[51 FR 34912, Sept. 30, 1986]

#### § 61.67 Emission tests.

(a) Unless a waiver of emission testing is obtained under § 61.13, the owner or operator of a source to which this subpart applies shall test emissions from the source,

(1) Within 90 days of the effective date in the case of an existing source or a new source which has an initial startup date preceding the effective date, or

(2) Within 90 days of startup in the case of a new source, initial startup of which occurs after the effective date.

(b) The owner or operator shall provide the Administrator at least 30 days prior notice of an emission test to afford the Administrator the opportunity to have an observer present during the test.

(c) Any emission test is to be conducted while the equipment being tested is operating at the maximum production rate at which the equipment will be operated and under other relevant conditions as may be specified by the Administrator based on representative performance of the source.

(d) [Reserved]

(e) When at all possible, each sample is to be analyzed within 24 hours, but in no case in excess of 72 hours of sample collection. Vinyl chloride emissions are to be determined within 30 days after the emission test. The owner or operator shall report the determinations to the Administrator by a registered letter dispatched before the close of the next business day following the determination.

(f) The owner or operator shall retain at the plant and make available, upon request, for inspection by the Administrator, for a minimum of 3 years, records of emission test results and other data needed to determine emissions.

(g) Unless otherwise specified, the owner or operator shall use test Test Methods in appendix B to this part for each test as required by paragraphs (g)(1), (g)(2), (g)(3), (g)(4), and (g)(5) of this section, unless an alternative method has been approved by the Administrator. If the Administrator finds reasonable grounds to dispute the results obtained by an alternative method, he may require the use of a reference method. If the results of the reference and alternative methods do not agree, the results obtained by the reference method prevail, and the Administrator may notify the owner or operator that approval of the method previously considered to be alternative is withdrawn. Whenever Test Method 107 is specified, and the conditions in Section 1.1, "Applicability" of Method 107A are met, Method 107A may be used.

(1) Test Method 106 is to be used to determine the vinyl chloride emissions from any source for which an emission

limit is prescribed in § 61.62 (a) or (b) § 61.63(a), or § 61.64(a)(1), (b), (c), or (d), or from any control system to which reactor emissions are required to be ducted in § 61.64(a)(2) or to which fugitive emissions are required to be ducted is § 61.65(b)(1)(ii), (b)(2), (b)(5), (b)(6)(ii), or (b)(9)(ii).

(i) For each run, one sample is to be collected. The sampling site is to be at least two stack or duct diameters downstream and one half diameter upstream from any flow disturbance such as a bend, expansion, contraction, or visible flame. For a rectangular cross section an equivalent diameter is to be determined from the following equation:

$$\text{equivalent diameter} = 2 \frac{(\text{length}) (\text{width})}{\text{length} + \text{width}}$$

The sampling point in the duct is to be at the centroid of the cross section. The sample is to be extracted at a rate proportional to the gas velocity at the sampling point. The sample is to contain a minimum volume of 50 liters corrected to standard conditions and is to be taken over a period as close to 1 hour as practicable.

(ii) Each emission test is to consist of three runs. For the purpose of determining emissions, the average of results of all runs is to apply. The average is to be computed on a time weighted basis.

(iii) For gas streams containing more than 10 percent oxygen the concentration of vinyl chloride as determined by Test Method 106 is to be corrected to 10 percent oxygen (dry basis) for determination of emissions by using the following equation:

$$C_b (\text{corrected}) = C_b \frac{10.9}{20.9 - \text{percent O}_2}$$

where:

$C_b$  (corrected)=The concentration of vinyl chloride in the exhaust gases, corrected to 10-percent oxygen.

$C_b$ =The concentration of vinyl chloride as measured by Test Method 106.

20.9=Percent oxygen in the ambient air at standard conditions.

10.9=Percent oxygen in the ambient air at standard conditions, minus the 10.0-percent oxygen to which the correction is being made.

Percent  $O_2$ =Percent oxygen in the exhaust gas as measured by Reference Method 3 in appendix A of part 60 of this chapter.

(iv) For those emission sources where the emission limit is prescribed in terms of mass rather than concentration, mass emissions in kg/100 kg product are to be determined by using the following equation:

$$C_{BX} = [C_b(2.60) Q 10^{-6}] [100]/Z$$

where:

$C_{BX}$ =kg vinyl chloride/100 kg product.

$C_b$ =The concentration of vinyl chloride as measured by Test Method 106.

2.60=Density of vinyl chloride at one atmosphere and 20° C in kg/m<sup>3</sup>.

$Q$ =Volumetric flow rate in m<sup>3</sup>/hr as determined by Reference Method 2 of appendix A to part 60 of this chapter.

$10^{-6}$ =Conversion factor for ppm.

$Z$ =Production rate (kg/hr).

(2) Test Method 107 or Method 601 (incorporated by reference as specified in § 61.18) is to be used to determine the concentration of vinyl chloride in each inprocess wastewater stream for which an emission limit is prescribed in § 61.65(b)(9)(i).

(3) When a stripping operation is used to attain the emission limits in § 61.64 (e) and (f), emissions are to be determined using Test Method 107 as follows:

(i) The number of strippers (or reactors used as strippers) and samples and the types and grades of resin to be sampled are to be determined by the Administrator for each individual plant at the time of the test based on the plant's operation.

(ii) Each sample is to be taken immediately following the stripping operation.

(iii) The corresponding quantity of material processed by each stripper (or reactor used as a stripper) is to be determined on a dry solids basis and by a method submitted to and approved by the Administrator.

(iv) At the prior request of the Administrator, the owner or operator shall provide duplicates of the samples required in paragraph (g)(3)(i) of this section.

(4) Where control technology other than or in addition to a stripping operation is used to attain the emission limit in § 61.64(e), emissions are to be determined as follows:

(i) Test Method 106 is to be used to determine atmospheric emissions from

all of the process equipment simultaneously. The requirements of paragraph (g)(1) of this section are to be met.

(ii) Test Method 107 is to be used to determine the concentration of vinyl chloride in each inprocess wastewater stream subject to the emission limit prescribed in §61.64(e). The mass of vinyl chloride in kg/100 kg product in each inprocess wastewater stream is to be determined by using the following equation:

$$C_{BX} = [C_d R 10^{-6}] [100]/Z$$

where:

$C_{BX}$ =kg vinyl chloride/100 kg product.

$C_d$ =the concentration of vinyl chloride as measured by Test Method 107.

$R$ =water flow rate in l/hr, determined in accordance with a method which has been submitted to and approved by the Administrator.

$10^{-6}$ =Conversion factor for ppm.

$Z$ =Production rate (kg/hr), determined in accordance with a method which has been submitted and approved by the Administrator.

(5) The reactor opening loss for which an emission limit is prescribed in §61.64(a)(2) is to be determined. The number of reactors for which the determination is to be made is to be specified by the Administrator for each individual plant at the time of the determination based on the plant's operation.

(i) Except as provided in paragraph (g)(5)(ii) of this section, the reactor opening loss is to be determined using the following equation:

$$C = W (2.60) (10^6) (Cb)/YZ$$

where:

$C$ =kg vinyl chloride emissions/kg product.

$W$ =Capacity of the reactor in  $m^3$ .

$2.60$ =Density of vinyl chloride at one atmosphere and  $20^\circ C$  in  $kg/m^3$ .

$10^{-6}$ =Conversion factor for ppm.

$C_b$ =ppm by volume vinyl chloride as determined by Test Method 106 or a portable hydrocarbon detector which measures hydrocarbons with a sensitivity of at least 10 ppm.

$Y$ =Number of batches since the reactor was last opened to the atmosphere.

$Z$ =Average kg of polyvinyl chloride produced per batch in the number of batches since the reactor was last opened to the atmosphere.

(A) If Method 106 is used to determine the concentration of vinyl chloride ( $C_b$ ), the sample is to be withdrawn at a constant rate with a probe of sufficient length to reach the vessel bottom from the manhole. Samples are to be taken for 5 minutes within 6 inches of the vessel bottom, 5 minutes near the vessel center, and 5 minutes near the vessel top.

(B) If a portable hydrocarbon detector is used to determine the concentration of vinyl chloride ( $C_b$ ), a probe of sufficient length to reach the vessel bottom from the manhole is to be used to make the measurements. One measurement will be made within 6 inches of the vessel bottom, one near the vessel center and one near the vessel top. Measurements are to be made at each location until the reading is stabilized. All hydrocarbons measured are to be assumed to be vinyl chloride.

(C) The production rate of polyvinyl chloride ( $Z$ ) is to be determined by a method submitted to and approved by the Administrator.

(ii) A calculation based on the number of evacuations, the vacuum involved, and the volume of gas in the reactor is hereby approved by the Administrator as an alternative method for determining reactor opening loss for postpolymerization reactors in the manufacture of bulk resins. Calculation methods based on techniques other than repeated evacuation of the reactor may be approved by the Administrator for determining reactor opening loss for postpolymerization reactors in the manufacture of bulk resins.

(6) For a reactor that is used as a stripper, the emissions of vinyl chloride from reactor opening loss and all sources following the reactor used as a stripper for which an emission limit is prescribed in §61.64(f) are to be determined. The number of reactors for which the determination is to be made is to be specified by the Administrator for each individual plant at the time of the determination based on the plant's operation.

(i) For each batch stripped in the reactor, the following measurements are to be made:

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(A) The concentration (ppm) of vinyl chloride in resin after stripping, measured according to paragraph (g)(3) of this section;

(B) The reactor vacuum (mm Hg) at end of strip from plant instrument; and

(C) The reactor temperature (°C) at end of strip from plant instrument.

(ii) For each batch stripped in the reactor, the following information is to be determined:

(A) The vapor pressure (mm Hg) of water in the reactor at end of strip from the following table:

| Reactor vapor temperature (°C) | H <sub>2</sub> O vapor pressure (mm Hg) | Reactor temperature (°C) | H <sub>2</sub> O vapor pressure (mm Hg) | Reactor temperature (°C) | H <sub>2</sub> O pressure (mm Hg) |
|--------------------------------|---|--------------------------|---|--------------------------|-----------------------------------|
| 40                             | 55.3                                    | 62                       | 163.8                                   | 84                       | 416.8                             |
| 41                             | 58.3                                    | 63                       | 171.4                                   | 85                       | 433.6                             |
| 42                             | 61.5                                    | 64                       | 179.3                                   | 86                       | 450.9                             |
| 43                             | 64.8                                    | 65                       | 187.5                                   | 87                       | 468.7                             |
| 44                             | 68.3                                    | 66                       | 196.1                                   | 88                       | 487.1                             |
| 45                             | 71.9                                    | 67                       | 205.0                                   | 89                       | 506.1                             |
| 46                             | 75.6                                    | 68                       | 214.2                                   | 90                       | 525.8                             |
| 47                             | 79.6                                    | 69                       | 223.7                                   | 91                       | 546.0                             |
| 48                             | 83.7                                    | 70                       | 233.7                                   | 92                       | 567.0                             |
| 49                             | 88.0                                    | 71                       | 243.9                                   | 93                       | 588.6                             |
| 50                             | 92.5                                    | 72                       | 254.6                                   | 94                       | 610.9                             |
| 51                             | 97.2                                    | 73                       | 265.7                                   | 95                       | 633.9                             |
| 52                             | 102.1                                   | 74                       | 277.2                                   | 96                       | 657.6                             |
| 53                             | 107.2                                   | 75                       | 289.1                                   | 97                       | 682.1                             |
| 54                             | 112.5                                   | 76                       | 301.4                                   | 98                       | 707.3                             |
| 55                             | 118.0                                   | 77                       | 314.1                                   | 99                       | 733.2                             |
| 56                             | 123.8                                   | 78                       | 327.3                                   | 100                      | 760.0                             |
| 57                             | 129.8                                   | 79                       | 341.0                                   |                          |                                   |
| 58                             | 136.1                                   | 80                       | 355.1                                   |                          |                                   |
| 59                             | 142.6                                   | 81                       | 369.7                                   |                          |                                   |
| 60                             | 149.4                                   | 82                       | 384.9                                   |                          |                                   |
| 61                             | 156.4                                   | 83                       | 400.6                                   |                          |                                   |

(B) The partial pressure (mm Hg) of vinyl chloride in reactor at end of strip from the following equation:

$$PPVC = 760 - RV - VPW$$

where:

PPVC=partial pressure of vinyl chloride, in mm Hg

760=atmospheric pressure at 0 °C, in mm Hg

RV=absolute value of reactor vacuum, in mm Hg

VPW=vapor pressure of water, in mm Hg

(C) The reactor vapor space volume (m<sup>3</sup>) at end of strip from the following equation:

$$RVSV = RC - WV - \frac{PVCW}{1,400}$$

$$C = (PPMVC)(10^{-3}) + \frac{(PPVC)(RVSV)(1,002)}{(PVCW)(273+RT)}$$

where:

C=g vinyl chloride/kg polyvinyl chloride product

where:

RVSV=reactor vapor space volume, in m<sup>3</sup>

RC=reactor capacity, in m<sup>3</sup>

WV=volume of water in reactor from recipe, in m<sup>3</sup>

PVCW=dry weight of polyvinyl chloride in reactor from recipe, in kg

1,400=typical density of polyvinyl chloride, in kg/m<sup>3</sup>

(iii) For each batch stripped in the reactor, the combined reactor opening loss and emissions from all sources following the reactor used as a stripper is to be determined using the following equation:

PPMVC=concentration of vinyl chloride in resin after stripping, in ppm

10<sup>-3</sup>=conversion factor for ppm

PPVC=partial pressure of vinyl chloride determined according to paragraph (g)(6)(ii)(B) of this section, in mm Hg

RVSV=reactor vapor space volume determined according to paragraph (g)(6)(ii)(C) of this section, in m<sup>3</sup>

1,002=ideal gas constant in g-°K/mm Hg-m<sup>3</sup> for vinyl chloride

PVCW=dry weight of polyvinyl chloride in reactor from recipe, in kg

273=conversion factor for °C to °K

RT=reactor temperature, in °C

(h)(1) Each piece of equipment within a process unit that can reasonably contain equipment in vinyl chloride service is presumed to be in vinyl chloride service unless an owner or operator demonstrates that the piece of equipment is not in vinyl chloride service. For a piece of equipment to be considered not in vinyl chloride service, it must be determined that the percent vinyl chloride content can be reasonably expected not to exceed 10 percent by weight for liquid streams or contained liquid volumes and 10 percent by volume for gas streams or contained gas volumes, which also includes gas volumes above liquid streams or contained liquid volumes. For purposes of determining the percent vinyl chloride content of the process fluid that is contained in or contacts equipment, procedures that conform to the methods described in ASTM Method D-2267 (incorporated by reference as specified in §61.18) shall be used.

(2)(i) An owner or operator may use engineering judgment rather than the procedures in paragraph (h)(1) of this section to demonstrate that the percent vinyl chloride content does not exceed 10 percent by weight for liquid streams and 10 percent by volume for gas streams, provided that the engineering judgment demonstrates that the vinyl chloride content clearly does not exceed 10 percent. When an owner or operator and the Administrator do not agree on whether a piece of equipment is not in vinyl chloride service, however, the procedures in paragraph (h)(1) of this section shall be used to resolve the disagreement.

(ii) If an owner or operator determines that a piece of equipment is in vinyl chloride service, the determination can be revised only after following the procedures in paragraph (h)(1) of this section.

(3) Samples used in determining the percent vinyl chloride content shall be representative of the process fluid that is contained in or contacts the equipment.

[41 FR 46564, Oct. 21, 1976, as amended at 42 FR 29007, June 7, 1977; 47 FR 39486, Sept. 8, 1982; 50 FR 46295, Nov. 7, 1985; 51 FR 34912, Sept. 30, 1986]

#### §61.68 Emission monitoring.

(a) A vinyl chloride monitoring system is to be used to monitor on a continuous basis the emissions from the sources for which emission limits are prescribed in §§61.62 (a) and (b), 61.63(a), and 61.64 (a)(1), (b), (c), and (d), and for any control system to which reactor emissions are required to be ducted in §61.64(a)(2) or to which fugitive emissions are required to be ducted in §61.65 (b)(1)(ii), and (b)(2), (b)(5), (b)(6) (ii), and (b)(9)(ii).

(b) The vinyl chloride monitoring system(s) used to meet the requirement in paragraph (a) of this section is to be a device which obtains representative samples from one or more applicable emission points on a continuous sequential basis and analyzes the samples with gas chromatography or, if the owner or operator assumes that all hydrocarbons measured are vinyl chloride, with infrared spectrophotometry, flame ion detection, or an alternative method. The vinyl chloride monitoring system used to meet the requirements in §61.65(b)(8)(i) may be used to meet the requirements of this section.

(c) A daily span check is to be conducted for each vinyl chloride monitoring system used. For all of the emission sources listed in paragraph (a) of this section, except the one for which an emission limit is prescribed in §61.62(b), the daily span check is to be conducted with a concentration of vinyl chloride equal to 10 ppm. For the emission source for which an emission limit is prescribed in §61.62(b), the daily span check is to be conducted with a concentration of vinyl chloride which is determined to be equivalent to the emission limit for that source based on the emission test required by §61.67. The calibration is to be done with either:

(1) A calibration gas mixture prepared from the gases specified in sections 5.2.1 and 5.2.2 of Test Method 106 and in accordance with section 7.1 of Test Method 106, or

(2) A calibration gas cylinder standard containing the appropriate concentration of vinyl chloride. The gas composition of the calibration gas cylinder standard is to have been certified by the manufacturer. The manufacturer must have recommended a maximum shelf life for each cylinder so that the concentration does not change greater than  $\pm 5$  percent from the certified value. The date of gas cylinder preparation, certified vinyl chloride concentration and recommended maximum shelf life must have been affixed to the cylinder before shipment from the manufacturer to the buyer. If a gas chromatograph is used as the vinyl chloride monitoring system, these gas mixtures may be directly used to prepare a chromatograph calibration curve as described in section 7.3 of Test Method 106. The requirements in sections 5.2.3.1 and 5.2.3.2 of Test Method 106 for certification of cylinder standards and for establishment and verification of calibration standards are to be followed.

(d) When exhaust gas(es), having emission limits that are subject to the requirement of paragraph (a) of this section, are emitted to the atmosphere without passing through the control system and required vinyl chloride monitoring system, the vinyl chloride content of the emission shall be calculated (in units of each applicable emission limit) by best practical engineering judgment based on the discharge duration and known VC concentrations in the affected equipment as determined in accordance with § 61.67(h) or other acceptable method.

(e) For each 3-hour period, the vinyl chloride content of emissions subject to the requirements of paragraphs (a) and (d) of this section shall be averaged (weighted according to the proportion of time that emissions were continuously monitored and that emissions bypassed the continuous monitor) for purposes of reporting excess emissions under § 61.70(c)(1).

(f) For each vinyl chloride emission to the atmosphere determined in ac-

cordance with paragraph (e) of this section to be in excess of the applicable emission limits, the owner or operator shall record the identity of the source(s), the date, time, and duration of the excess emission, the cause of the excess emission, and the approximate total vinyl chloride loss during the excess emission, and the method used for determining the vinyl chloride loss. This information shall be retained and made available for inspection by the Administrator as required by § 61.71(a).

[41 FR 46564, Oct. 21, 1976; 41 FR 53017, Dec. 3, 1976, as amended at 42 FR 29007, June 7, 1977; 50 FR 46295, Nov. 7, 1985; 51 FR 34913, Sept. 30, 1986; 55 FR 28349, July 10, 1990]

#### § 61.69 Initial report.

(a) An owner or operator of any source to which this subpart applies shall submit a statement in writing notifying the Administrator that the equipment and procedural specifications in § 61.65 (b)(1), (b)(2), (b)(3), (b)(4), (b)(5), (b)(6), (b)(7), and (b)(8) are being implemented.

(b)(1) In the case of an existing source or a new source which has an initial startup date preceding the effective date, the statement is to be submitted within 90 days of the effective date, unless a waiver of compliance is granted under § 61.11, along with the information required under § 61.10. If a waiver of compliance is granted, the statement is to be submitted on a date scheduled by the Administrator.

(2) In the case of a new source which did not have an initial startup date preceding the effective date, the statement is to be submitted within 90 days of the initial startup date.

(c) The statement is to contain the following information:

(1) A list of the equipment installed for compliance,

(2) A description of the physical and functional characteristics of each piece of equipment,

(3) A description of the methods which have been incorporated into the standard operating procedures for measuring or calculating the emissions for which emission limits are prescribed in § 61.65 (b)(1)(i) and (b)(6)(i),

(4) A statement that each piece of equipment is installed and that each

piece of equipment and each procedure is being used.

**§61.70 Reporting.**

(a)(1) The owner or operator of any source to which this subpart applies shall submit to the Administrator on March 15, June 15, September 15, and December 15 of each year a report in writing containing the information required by this section. The first report is to be submitted following the first full 3-month reporting period after the initial report is submitted.

(2) In the case of an existing source, the approved reporting schedule shall be used. In addition, quarterly reports shall be submitted exactly 3 months following the current reporting dates.

(b)(1) In the case of an existing source or a new source which has an initial startup date preceding the effective date, the first report is to be submitted within 180 days of the effective date, unless a waiver of compliance is granted under §61.11. If a waiver of compliance is granted, the first report is to be submitted on a date scheduled by the Administrator.

(2) In the case of a new source which did not have an initial startup date preceding the effective date, the first report is to be submitted within 180 days of the initial startup date.

(c) Unless otherwise specified, the owner or operator shall use the Test Methods in appendix B to this part to conduct emission tests as required by paragraphs (c)(2) and (c)(3) of this section, unless an alternative method has been approved by the Administrator. If the Administrator finds reasonable grounds to dispute the results obtained by an alternative method, he may require the use of a reference method. If the results of the reference and alternative methods do not agree, the results obtained by the reference method prevail, and the Administrator may notify the owner or operator that approval of the method previously considered to be alternative is withdrawn.

(1) The owner or operator shall include in the report a record of the vinyl chloride content of emissions for each 3-hour period during which average emissions are in excess of the emission limits in §61.62 (a) or (b), §61.63 (a), or §61.64 (a)(1), (b), (c), or (d), or during

which average emissions are in excess of the emission limits specified for any control system to which reactor emissions are required to be ducted in §61.64 (a)(2) or to which fugitive emissions are required to be ducted in §61.65 (b)(i)(ii), (b)(2), (b)(5), (b)(6)(ii), or (b)(9)(ii). The number of 3-hour periods for which average emissions were determined during the reporting period shall be reported. If emissions in excess of the emission limits are not detected, the report shall contain a statement that no excess emissions have been detected. The emissions are to be determined in accordance with §61.68(e).

(2) In polyvinyl chloride plants for which a stripping operation is used to attain the emission level prescribed in §61.64(e), the owner or operator shall include in the report a record of the vinyl chloride content in the polyvinyl chloride resin.

(i) If batch stripping is used, one representative sample of polyvinyl chloride resin is to be taken from each batch of each grade of resin immediately following the completion of the stripping operation, and identified by resin type and grade and the date and time the batch is completed. The corresponding quantity of material processed in each stripper batch is to be recorded and identified by resin type and grade and the date and time the batch is completed.

(ii) If continuous stripping is used, one representative sample of polyvinyl chloride resin is to be taken for each grade of resin processed or at intervals of 8 hours for each grade of resin which is being processed, whichever is more frequent. The sample is to be taken as the resin flows out of the stripper and identified by resin type and grade and the date and time the sample was taken. The corresponding quantity of material processed by each stripper over the time period represented by the sample during the 8-hour period, is to be recorded and identified by resin type and grade and the date and time it represents.

(iii) The vinyl chloride content in each sample is to be determined by Test Method 107 as prescribed in §61.67(g)(3).

(iv) [Reserved]

(v) The report to the Administrator by the owner or operator is to include a record of any 24-hour average resin vinyl chloride concentration, as determined in this paragraph, in excess of the limits prescribed in §61.64(e). The vinyl chloride content found in each sample required by paragraphs (c)(2)(i)

and (c)(2)(ii) of this section shall be averaged separately for each type of resin, over each calendar day and weighted according to the quantity of each grade of resin processed by the stripper(s) that calendar day, according to the following equation:

$$A_T = \frac{\sum_{i=1}^n P_{Gi}M_{Gi}}{Q_T} = \frac{P_{G^1}M_{G^1} + P_{G^2}M_{G^2} + \dots + P_{Gn}M_{Gn}}{Q_T}$$

where:

A<sub>T</sub> =24-hour average concentration of type T resin in ppm (dry weight basis)

Q<sub>T</sub> =Total production of type T resin over the 24-hour period, in kg.

T=Type of resin.

M<sub>Gi</sub>=Concentration of vinyl chloride in one sample of grade Gi resin in ppm.

P<sub>Gi</sub>=Production of grade Gi resin represented by the sample, in kg.

Gi=Grade of resin: e.g., G1, G2, G3.

n=Total number of grades of resin produced during the 24-hour period.

The number of 24-hour average concentrations for each resin type determined during the reporting period shall be reported. If no 24-hour average resin vinyl chloride concentrations in excess of the limits prescribed in §61.64(e) are measured, the report shall state that no excess resin vinyl chloride concentrations were measured.

(vi) The owner or operator shall retain at the source and make available for inspection by the Administrator for a minimum of 3 years records of all data needed to furnish the information required by paragraph (c)(2)(v) of this section. The records are to contain the following information:

(A) The vinyl chloride content found in all the samples required in paragraphs (c)(2)(i) and (c)(2)(ii) of this section, identified by the resin type and grade and the time and date of the sample, and

(B) The corresponding quantity of polyvinyl chloride resin processed by the stripper(s), identified by the resin type and grade and the time and date it represents.

(3) The owner or operator shall include in the report a record of any emissions from each reactor opening in excess of the emission limits prescribed in §61.64(a)(2). Emissions are to be determined in accordance with §61.67(g)(5), except that emissions for each reactor are to be determined. The number of reactor openings during the reporting period shall be reported. If emissions in excess of the emission limits are not detected, the report shall include a statement that excess emissions have not been detected.

(4) In polyvinyl chloride plants for which stripping in the reactor is used to attain the emission level prescribed in §61.64(f), the owner or operator shall include in the report a record of the vinyl chloride emissions from reactor opening loss and all sources following the reactor used as a stripper.

(i) One representative sample of polyvinyl chloride resin is to be taken from each batch of each grade of resin immediately following the completion of the stripping operation, and identified by resin type and grade and the date and time the batch is completed. The corresponding quantity of material processed in each stripper batch is to be recorded and identified by resin type and grade and the date and time the batch is completed.

(ii) The vinyl chloride content in each sample is to be determined by Test Method 107 as prescribed in §61.67(g)(3).

(iii) The combined emissions from reactor opening loss and all sources following the reactor used as a stripper are to be determined for each batch stripped in a reactor according to the procedure prescribed in § 61.67(g)(6).

(iv) The report to the Administrator by the owner or operator is to include a record of any 24-hour average combined reactor opening loss and emissions from all sources following the reactor used as a stripper as determined in this paragraph, in excess of the lim-

its prescribed in § 61.64(f). The combined reactor opening loss and emissions from all sources following the reactor used as a stripper associated with each batch are to be averaged separately for each type of resin, over each calendar day and weighted according to the quantity of each grade of resin stripped in reactors that calendar day as follows:

For each type of resin (suspension, dispersion, latex, bulk, other), the following calculation is to be performed:

$$A_T = \frac{\sum_{i=1}^n P_{G_i} C_{G_i}}{Q_T} = \frac{P_{G^1} C_{G^1} + P_{G^2} C_{G^2} + \dots + P_{G^n} C_{G^n}}{Q_T}$$

where:

A<sub>T</sub> = 24-hour average combined reactor opening loss and emissions from all sources following the reactor used as a stripper, in g vinyl chloride/kg product (dry weight basis).

Q<sub>T</sub> = Total production of resin in batches for which stripping is completed during the 24-hour period, in kg.

T = Type of resin.

C<sub>G<sub>i</sub></sub> = Average combined reactor opening loss and emissions from all sources following the reactor used as a stripper of all batches of grade G<sub>i</sub> resin for which stripping is completed during the 24-hour period, in g vinyl chloride/kg product (dry weight basis) (determined according to procedure prescribed in § 61.67(g)(6)).

P<sub>G<sub>i</sub></sub> = Production of grade G<sub>i</sub> resin in the batches for which C is determined, in kg.

G<sub>i</sub> = Grade of resin e.g., G<sub>1</sub>, G<sub>2</sub>, and G<sub>3</sub>.

n = Total number of grades of resin in batches for which stripping is completed during the 24-hour period.

The number of 24-hour average emissions determined during the reporting period shall be reported. If no 24-hour average combined reactor opening loss and emissions from all sources following the reactor used a stripper in excess of the limits prescribed in § 61.64(f) are determined, the report shall state

that no excess vinyl chloride emissions were determined.

[41 FR 46564, Oct. 21, 1976, as amended at 42 FR 29007, June 7, 1977; 50 FR 46295, Nov. 7, 1985; 51 FR 34914, Sept. 30, 1986; 53 FR 36972, Sept. 23, 1988; 53 FR 46976, Nov. 21, 1988]

**§ 61.71 Recordkeeping.**

(a) The owner or operator of any source to which this subpart applies shall retain the following information at the source and make it available for inspection to the Administrator for a minimum of 3 years:

(1) A record of the leaks detected by the vinyl chloride monitoring system, as required by § 61.65(b)(8), including the concentrations of vinyl chloride measured, analyzed, and recorded by the vinyl chloride detector, the location of each measurement and the date and approximate time of each measurement.

(2) A record of the leaks detected during routine monitoring with the portable hydrocarbon detector and the action taken to repair the leaks, as required by § 61.65(b)(8), including a brief statement explaining the location and cause of each leak detected with the portable hydrocarbon detector, the date and time of the leak, and any action taken to eliminate that leak.

(3) A record of emissions measured in accordance with § 61.68.

(4) A daily operating record for each polyvinyl chloride reactor, including pressures and temperatures.

[41 FR 46594, Oct. 21, 1976, as amended at 42 FR 29007, June 7, 1977; 51 FR 34914, Sept. 30, 1986]

### Subpart G—[Reserved]

## Subpart H—National Emission Standards for Emissions of Radionuclides Other Than Radon From Department of Energy Facilities

SOURCE: 54 FR 51695, Dec. 15, 1989, unless otherwise noted.

### § 61.90 Designation of facilities.

The provisions of this subpart apply to operations at any facility owned or operated by the Department of Energy that emits any radionuclide other than radon-222 and radon-220 into the air, except that this subpart does not apply to disposal at facilities subject to 40 CFR part 191, subpart B or 40 CFR part 192.

### § 61.91 Definitions.

As used in this subpart, all terms not defined here have the meaning given them in the Clean Air Act or 40 CFR part 61, subpart A. The following terms shall have the following specific meanings:

(a) *Effective dose equivalent* means the sum of the products of absorbed dose and appropriate factors to account for differences in biological effectiveness due to the quality of radiation and its distribution in the body of reference man. The unit of the effective dose equivalent is the rem. For purposes of this subpart, doses caused by radon-222 and its respective decay products formed after the radon is released from the facility are not included. The method for calculating effective dose equivalent and the definition of reference man are outlined in the International Commission on Radiological Protection's Publication No. 26.

(b) *Facility* means all buildings, structures and operations on one contiguous site.

(c) *Radionuclide* means a type of atom which spontaneously undergoes radioactive decay.

(d) *Residence* means any home, house, apartment building, or other place of dwelling which is occupied during any portion of the relevant year.

### § 61.92 Standard.

Emissions of radionuclides to the ambient air from Department of Energy facilities shall not exceed those amounts that would cause any member of the public to receive in any year an effective dose equivalent of 10 mrem/yr.

### § 61.93 Emission monitoring and test procedures.

(a) To determine compliance with the standard, radionuclide emissions shall be determined and effective dose equivalent values to members of the public calculated using EPA approved sampling procedures, computer models CAP-88 or AIRDOS-PC, or other procedures for which EPA has granted prior approval. DOE facilities for which the maximally exposed individual lives within 3 kilometers of all sources of emissions in the facility, may use EPA's COMPLY model and associated procedures for determining dose for purposes of compliance.

(b) Radionuclide emission rates from point sources (stacks or vents) shall be measured in accordance with the following requirements or other procedures for which EPA has granted prior approval:

(1) Effluent flow rate measurements shall be made using the following methods:

(i) Reference Method 2 of appendix A to part 60 shall be used to determine velocity and volumetric flow rates for stacks and large vents.

(ii) Reference Method 2A of appendix A to part 60 shall be used to measure flow rates through pipes and small vents.

(iii) The frequency of the flow rate measurements shall depend upon the variability of the effluent flow rate. For variable flow rates, continuous or frequent flow rate measurements shall be made. For relatively constant flow rates only periodic measurements are necessary.

(2) Radionuclides shall be directly monitored or extracted, collected and measured using the following methods:

(i) Reference Method 1 of appendix A part 60 shall be used to select monitoring or sampling sites.

(ii) The effluent stream shall be directly monitored continuously with an in-line detector or representative samples of the effluent stream shall be withdrawn continuously from the sampling site following the guidance presented in ANSIN13.1-1969 "Guide to Sampling Airborne Radioactive Materials in Nuclear Facilities" (including the guidance presented in appendix A of ANSIN13.1) (incorporated by reference—see §61.18). The requirements for continuous sampling are applicable to batch processes when the unit is in operation. Periodic sampling (grab samples) may be used only with EPA's prior approval. Such approval may be granted in cases where continuous sampling is not practical and radionuclide emission rates are relatively constant. In such cases, grab samples shall be collected with sufficient frequency so as to provide a representative sample of the emissions.

(iii) Radionuclides shall be collected and measured using procedures based on the principles of measurement described in appendix B, Method 114. Use of methods based on principles of measurement different from those described in appendix B, Method 114 must have prior approval from the Administrator. EPA reserves the right to approve measurement procedures.

(iv) A quality assurance program shall be conducted that meets the performance requirements described in appendix B, Method 114.

(3) When it is impractical to measure the effluent flow rate at an existing source in accordance with the requirements of paragraph (b)(1) of this section or to monitor or sample an effluent stream at an existing source in accordance with the site selection and sample extraction requirements of paragraph (b)(2) of this section, the facility owner or operator may use alternative effluent flow rate measurement procedures or site selection and sample extraction procedures provided that:

(i) It can be shown that the requirements of paragraph (b) (1) or (2) of this

section are impractical for the effluent stream.

(ii) The alternative procedure will not significantly underestimate the emissions.

(iii) The alternative procedure is fully documented.

(iv) The owner or operator has received prior approval from EPA.

(4)(i) Radionuclide emission measurements in conformance with the requirements of paragraph (b) of this section shall be made at all release points which have a potential to discharge radionuclides into the air in quantities which could cause an effective dose equivalent in excess of 1% of the standard. All radionuclides which could contribute greater than 10% of the potential effective dose equivalent for a release point shall be measured. With prior EPA approval, DOE may determine these emissions through alternative procedures. For other release points which have a potential to release radionuclides into the air, periodic confirmatory measurements shall be made to verify the low emissions.

(ii) To determine whether a release point is subject to the emission measurement requirements of paragraph (b) of this section, it is necessary to evaluate the potential for radionuclide emissions for that release point. In evaluating the potential of a release point to discharge radionuclides into the air for the purposes of this section, the estimated radionuclide release rates shall be based on the discharge of the effluent stream that would result if all pollution control equipment did not exist, but the facilities operations were otherwise normal.

(5) Environmental measurements of radionuclide air concentrations at critical receptor locations may be used as an alternative to air dispersion calculations in demonstrating compliance with the standard if the owner or operator meets the following criteria:

(i) The air at the point of measurement shall be continuously sampled for collection of radionuclides.

(ii) Those radionuclides released from the facility, which are the major contributors to the effective dose equivalent must be collected and measured as part of the environmental measurement program.

(iii) Radionuclide concentrations which would cause an effective dose equivalent of 10% of the standard shall be readily detectable and distinguishable from background.

(iv) Net measured radionuclide concentrations shall be compared to the concentration levels in Table 2 of appendix E to determine compliance with the standard. In the case of multiple radionuclides being released from a facility, compliance shall be demonstrated if the value for all radionuclides is less than the concentration level in Table 2, and the sum of the fractions that result when each measured concentration value is divided by the value in Table 2 for each radionuclide is less than 1.

(v) A quality assurance program shall be conducted that meets the performance requirements described in appendix B, Method 114.

(vi) Use of environmental measurements to demonstrate compliance with the standard is subject to prior approval of EPA. Applications for approval shall include a detailed description of the sampling and analytical methodology and show how the above criteria will be met.

**§ 61.94 Compliance and reporting.**

(a) Compliance with this standard shall be determined by calculating the highest effective dose equivalent to any member of the public at any offsite point where there is a residence, school, business or office. The owners or operators of each facility shall submit an annual report to both EPA headquarters and the appropriate regional office by June 30 which includes the results of the monitoring as recorded in DOE's Effluent Information System and the dose calculations required by § 61.93(a) for the previous calendar year.

(b) In addition to the requirements of paragraph (a) of this section, an annual report shall include the following information:

(1) The name and location of the facility.

(2) A list of the radioactive materials used at the facility.

(3) A description of the handling and processing that the radioactive materials undergo at the facility.

(4) A list of the stacks or vents or other points where radioactive materials are released to the atmosphere.

(5) A description of the effluent controls that are used on each stack, vent, or other release point and an estimate of the efficiency of each control device.

(6) Distances from the points of release to the nearest residence, school, business or office and the nearest farms producing vegetables, milk, and meat.

(7) The values used for all other user-supplied input parameters for the computer models (e.g., meteorological data) and the source of these data.

(8) A brief description of all construction and modifications which were completed in the calendar year for which the report is prepared, but for which the requirement to apply for approval to construct or modify was waived under § 61.96 and associated documentation developed by DOE to support the waiver. EPA reserves the right to require that DOE send to EPA all the information that normally would be required in an application to construct or modify, following receipt of the description and supporting documentation.

(9) Each report shall be signed and dated by a corporate officer or public official in charge of the facility and contain the following declaration immediately above the signature line: "I certify under penalty of law that I have personally examined and am familiar with the information submitted herein and based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment. See, 18 U.S.C. 1001."

(c) If the facility is not in compliance with the emission limits of § 61.92 in the calendar year covered by the report, then the facility must commence reporting to the Administrator on a monthly basis the information listed in paragraph (b) of this section, for the preceding month. These reports will start the month immediately following the submittal of the annual report for the year in noncompliance and will be due 30 days following the end of each

month. This increased level of reporting will continue until the Administrator has determined that the monthly reports are no longer necessary. In addition to all the information required in paragraph (b) of this section, monthly reports shall also include the following information:

(1) All controls or other changes in operation of the facility that will be or are being installed to bring the facility into compliance.

(2) If the facility is under a judicial or administrative enforcement decree, the report will describe the facilities performance under the terms of the decree.

(d) In those instances where the information requested is classified, such information will be made available to EPA separate from the report and will be handled and controlled according to applicable security and classification regulations and requirements.

#### **§61.95 Recordkeeping requirements.**

All facilities must maintain records documenting the source of input parameters including the results of all measurements upon which they are based, the calculations and/or analytical methods used to derive values for input parameters, and the procedure used to determine effective dose equivalent. This documentation should be sufficient to allow an independent auditor to verify the accuracy of the determination made concerning the facility's compliance with the standard. These records must be kept at the site of the facility for at least five years and, upon request, be made available for inspection by the Administrator, or his authorized representative.

#### **§61.96 Applications to construct or modify.**

(a) In addition to any activity that is defined as construction under 40 CFR part 61, subpart A, any fabrication, erection or installation of a new building or structure within a facility that emits radionuclides is also defined as new construction for purposes of 40 CFR part 61, subpart A.

(b) An application for approval under §61.07 or notification of startup under §61.09 does not need to be filed for any new construction of or modification

within an existing facility if the effective dose equivalent, caused by all emissions from the new construction or modification, is less than 1% of the standard prescribed in §61.92. For purposes of this paragraph the effective dose equivalent shall be calculated using the source term derived using appendix D as input to the dispersion and other computer models described in §61.93. DOE may, with prior approval from EPA, use another procedure for estimating the source term for use in this paragraph. A facility is eligible for this exemption only if, based on its last annual report, the facility is in compliance with this subpart.

(c) Conditions to approvals granted under §61.08 will not contain requirements for post approval reporting on operating conditions beyond those specified in §61.94.

#### **§61.97 Exemption from the reporting and testing requirements of 40 CFR 61.10.**

All facilities designated under this subpart are exempt from the reporting requirements of 40 CFR 61.10.

### **Subpart I—National Emission Standards for Radionuclide Emissions From Facilities Licensed by the Nuclear Regulatory Commission and Federal Facilities Not Covered by Subpart H**

SOURCE: 54 FR 51697, Dec. 15, 1989, unless otherwise noted.

EFFECTIVE DATE NOTE: The effectiveness of subpart I for nuclear power reactors was stayed until April 15, 1991, at 56 FR 10514, Mar. 13, 1991. At 56 FR 37158, Aug. 5, 1991, the effective date was stayed in part indefinitely. See §61.109(b).

#### **§61.100 Applicability.**

The provisions of this subpart apply to facilities other than nuclear power reactors which are licensed by the Nuclear Regulatory Commission. This subpart also applies to facilities owned or operated by any Federal agency other than the Department of Energy, except that this subpart does not apply to disposal at facilities regulated under 40 CFR part 191, subpart B, or to any uranium mill tailings pile after it has

been disposed of under 40 CFR part 192, or to low energy accelerators, or to any NRC-licensee that possesses and uses radionuclides only in the form of sealed sources.

[60 FR 46212, Sept. 5, 1995]

**§ 61.101 Definitions.**

As used in this subpart, all terms not defined here have the meaning given them in the Clean Air Act or subpart A of part 61. The following terms shall have the following specific meanings:

(a) *Agreement State* means a State with which the Atomic Energy Commission or the Nuclear Regulatory Commission has entered into an effective agreement under subsection 274(b) of the Atomic Energy Act of 1954, as amended.

(b) *Effective dose equivalent* means the sum of the products of absorbed dose and appropriate factors to account for differences in biological effectiveness due to the quality of radiation and its distribution in the body of reference man. The unit of the effective dose equivalent is the rem. For purposes of this subpart doses caused by radon-222 and its decay products formed after the radon is released from the facility are not included. The method for calculating effective dose equivalent and the definition of reference man are outlined in the International Commission on Radiological Protection's Publication No. 26.

(c) *Facility* means all buildings, structures and operations on one contiguous site.

(d) *Federal facility* means any facility owned or operated by any department, commission, agency, office, bureau or other unit of the government of the United States of America except for facilities owned or operated by the Department of Energy.

(e) *NRC-licensed facility* means any facility licensed by the Nuclear Regulatory Commission or any Agreement State to receive title to, receive, possess, use, transfer, or deliver any source, by-product, or special nuclear material.

(f) *Radionuclide* means a type of atom which spontaneously undergoes radioactive decay.

**§ 61.102 Standard.**

(a) Emissions of radionuclides, including iodine, to the ambient air from a facility regulated under this subpart shall not exceed those amounts that would cause any member of the public to receive in any year an effective dose equivalent of 10 mrem/yr.

(b) Emissions of iodine to the ambient air from a facility regulated under this subpart shall not exceed those amounts that would cause any member of the public to receive in any year an effective dose equivalent of 3 mrem/yr.

**§ 61.103 Determining compliance.**

(a) Compliance with the emission standard in this subpart shall be determined through the use of either the EPA computer code COMPLY or the alternative requirements of appendix E. Facilities emitting radionuclides not listed in COMPLY or appendix E shall contact EPA to receive the information needed to determine dose. The source terms to be used for input into COMPLY shall be determined through the use of the measurement procedures listed in § 61.107 or the emission factors in appendix D or through alternative procedures for which EPA has granted prior approval; or,

(b) Facilities may demonstrate compliance with the emission standard in this subpart through the use of computer models that are equivalent to COMPLY, provided that the model has received prior approval from EPA headquarters. Any facility using a model other than COMPLY must file an annual report. EPA may approve an alternative model in whole or in part and may limit its use to specific circumstances.

**§ 61.104 Reporting requirements.**

(a) The owner or operator of a facility subject to this subpart must submit an annual report to the EPA covering the emissions of a calendar year by March 31 of the following year.

(1) The report or application for approval to construct or modify as required by 40 CFR part 61, subpart A and § 61.106, must provide the following information:

- (i) The name of the facility.
- (ii) The name of the person responsible for the operation of the facility

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and the name of the person preparing the report (if different).

(iii) The location of the facility, including suite and/or building number, street, city, county, state, and zip code.

(iv) The mailing address of the facility, if different from item (iii).

(v) A list of the radioactive materials used at the facility.

(vi) A description of the handling and processing that the radioactive materials undergo at the facility.

(vii) A list of the stacks or vents or other points where radioactive materials are released to the atmosphere.

(viii) A description of the effluent controls that are used on each stack, vent, or other release point and an estimate of the efficiency of each device.

(ix) Distances from the point of release to the nearest residence, school, business or office and the nearest farms producing vegetables, milk, and meat.

(x) The effective dose equivalent calculated using the compliance procedures in §61.103.

(xi) The physical form and quantity of each radionuclide emitted from each stack, vent or other release point, and the method(s) by which these quantities were determined.

(xii) The volumetric flow, diameter, effluent temperature, and release height for each stack, vent or other release point where radioactive materials are emitted, the method(s) by which these were determined.

(xiii) The height and width of each building from which radionuclides are emitted.

(xiv) The values used for all other user-supplied input parameters (e.g., meteorological data) and the source of these data.

(xv) A brief description of all construction and modifications which were completed in the calendar year for which the report is prepared, but for which the requirement to apply for approval to construct or modify was waived under §61.106, and associated documentation developed by the licensee to support the waiver. EPA reserves the right to require that the licensee send to EPA all the information that normally would be required in an application to construct or modify, fol-

lowing receipt of the description and supporting documentation.

(xvi) Each report shall be signed and dated by a corporate officer or public official in charge of the facility and contain the following declaration immediately above the signature line: "I certify under penalty of law that I have personally examined and am familiar with the information submitted herein and based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment. See, 18 U.S.C. 1001."

(b) Facilities emitting radionuclides in an amount that would cause less than 10% of the dose standard in §61.102, as determined by the compliance procedures from §61.103(a), are exempt from the reporting requirements of §61.104(a). Facilities shall annually make a new determination whether they are exempt from reporting.

(c) If the facility is not in compliance with the emission limits of §61.102 in the calendar year covered by the report, the facility must report to the Administrator on a monthly basis the information listed in paragraph (a) of this section, for the preceding month. These reports will start the month immediately following the submittal of the annual report for the year in non-compliance and will be due 30 days following the end of each month. This increased level of reporting will continue until the Administrator has determined that the monthly reports are no longer necessary. In addition to all the information required in paragraph (a) of this section, monthly reports shall also include the following information:

(1) All controls or other changes in operation of the facility that will be or are being installed to bring the facility into compliance.

(2) If the facility is under a judicial or administrative enforcement decree the report will describe the facilities performance under the terms of the decree.

(d) The first report will cover the emissions of calendar year 1990.

**§ 61.105 Recordkeeping requirements.**

The owner or operator of any facility must maintain records documenting the source of input parameters including the results of all measurements upon which they are based, the calculations and/or analytical methods used to derive values for input parameters, and the procedure used to determine compliance. This documentation should be sufficient to allow an independent auditor to verify the accuracy of the determination made concerning the facility's compliance with the standard, and, if claimed, qualification for exemption from reporting. These records must be kept at the site of the facility for at least five years and upon request be made available for inspection by the Administrator, or his authorized representative.

**§ 61.106 Applications to construct or modify.**

(a) In addition to any activity that is defined as construction under 40 CFR part 61, subpart A, any fabrication, erection or installation of a new building or structure within a facility is also defined as new construction for purposes of 40 CFR part 61, subpart A.

(b) An application under § 61.07 does not need to be filed for any new construction of or modification within an existing facility if one of the following conditions is met:

(1) The effective dose equivalent calculated by using methods described in § 61.103, that is caused by all emissions from the facility including those potentially emitted by the proposed new construction or modification, is less than 10% of the standard prescribed in § 61.102.

(2) The effective dose equivalent calculated by using methods described in § 61.103, that is caused by all emissions from the new construction or modification, is less than 1% of the limit prescribed in § 61.102. A facility is eligible for this exemption only if the facility, based on its last annual report, is in compliance with this subpart.

**§ 61.107 Emission determination.**

(a) Facility owners or operators may, in lieu of monitoring, estimate radionuclide emissions in accordance with

appendix D, or other procedure for which EPA has granted prior approval.

(b) Radionuclide emission rates from point sources (e.g. stacks or vents) shall be measured in accordance with the following requirements:

(1) Effluent flow rate measurements shall be made using the following methods:

(i) Reference Method 2 of appendix A to part 60 shall be used to determine velocity and volumetric flow rates for stacks and large vents.

(ii) Reference Method 2A of appendix A to part 60 shall be used to measure flow rates through pipes and small vents.

(iii) The frequency of the flow rate measurements shall depend upon the variability of the effluent flow rate. For variable flow rates, continuous or frequent flow rate measurements shall be made. For relatively constant flow rates only periodic measurements are necessary.

(2) Radionuclides shall be directly monitored or extracted, collected, and measured using the following methods:

(i) Reference Method 1 of appendix A part 60 shall be used to select monitoring or sampling sites.

(ii) The effluent stream shall be directly monitored continuously using an in-line detector or representative samples of the effluent stream shall be withdrawn continuously from the sampling site following the guidance presented in ANSIN13.1-1969 "Guide to Sampling Airborne Radioactive Materials in Nuclear Facilities" (including the guidance presented in appendix A of ANSIN13.1) (incorporated by reference—see § 61.18). The requirements for continuous sampling are applicable to batch processes when the unit is in operation. Periodic sampling (grab samples) may be used only with EPA's prior approval. Such approval may be granted in cases where continuous sampling is not practical and radionuclide emission rates are relatively constant. In such cases, grab samples shall be collected with sufficient frequency so as to provide a representative sample of the emissions.

(iii) Radionuclides shall be collected and measured using procedures based on the principles of measurement described in appendix B, Method 114. Use

of methods based on principles of measurement different from those described in appendix B, Method 114 must have prior approval from the Administrator. EPA reserves the right to approve alternative measurement procedures in whole or in part.

(iv) A quality assurance program shall be conducted that meets the performance requirements described in appendix B, method 114.

(3) When it is impractical to measure the effluent flow rate at an existing source in accordance with the requirements of paragraph (b)(1) of this section or to monitor or sample an effluent stream at an existing source in accordance with the site selection and sample extraction requirements of paragraph (b)(2) of this section, the facility owner or operator may use alternative effluent flow rate measurement procedures or site selection and sample extraction procedures provided that:

(i) It can be shown that the requirements of paragraphs (b) (1) and (2) of this section are impractical for the effluent stream.

(ii) The alternative procedure will not significantly underestimate the emissions.

(iii) The alternative procedure is fully documented.

(iv) The owner or operator has received prior approval from EPA.

(4)(i) Radionuclide emission measurements in conformance with the requirements of paragraph (b) of this section shall be made at all release points which have a potential to discharge radionuclides into the air in quantities which could cause an effective dose equivalent in excess of 1% of the standard. All radionuclides which could contribute greater than 10% of the potential effective dose equivalent for a release point shall be measured. For other release points which have a potential to release radionuclides into the air, periodic confirmatory measurements should be made to verify the low emissions.

(ii) To determine whether a release point is subject to the emission measurement requirements of paragraph (b) of this section, it is necessary to evaluate the potential for radionuclide emissions for that release point. In evaluating the potential of a release point to

discharge radionuclides into the air, the estimated radionuclide release rates shall be based on the discharge of the uncontrolled effluent stream into the air.

(5) Environmental measurements of radionuclide air concentrations at critical receptor locations may be used as an alternative to air dispersion calculations in demonstrating compliance with the standards if the owner or operator meets the following criteria:

(i) The air at the point of measurement shall be continuously sampled for collection of radionuclides.

(ii) Those radionuclides released from the facility, which are the major contributors to the effective dose equivalent must be collected and measured as part of the environmental measurements program.

(iii) Radionuclide concentrations which would cause an effective dose equivalent greater than or equal to 10% of the standard shall be readily detectable and distinguishable from background.

(iv) Net measured radionuclide concentrations shall be compared to the concentration levels in table 2 of appendix E to determine compliance with the standard. In the case of multiple radionuclides being released from a facility, compliance shall be demonstrated if the value for all radionuclides is less than the concentration level in table 2 and the sum of the fractions that result when each measured concentration value is divided by the value in table 2 for each radionuclide is less than 1.

(v) A quality assurance program shall be conducted that meets the performance requirements described in appendix B, method 114.

(vi) Use of environmental measurements to demonstrate compliance with the standard is subject to prior approval of EPA. Applications for approval shall include a detailed description of the sampling and analytical methodology and show how the above criteria will be met.

(c) The following facilities may use either the methodologies and quality assurance programs described in paragraph (b) of this section or may use the following:

(1) Fuel processing and fabrication plants and uranium hexafluoride plants may determine their emissions in conformance with the Nuclear Regulatory Commission's Regulatory Guide 4.16 dated December 1985. In addition, they may conduct a quality assurance program as described in the Nuclear Regulatory Commission's Regulatory Guide 4.15 dated February 1979.

(2) Uranium mills may determine their emissions in conformance with the Nuclear Regulatory Commission's Regulatory Guide 4.14 dated April 1980. In addition, they may conduct a quality assurance program as described in the Nuclear Regulatory Commission's Regulatory Guide 4.15 dated February 1979.

[54 FR 51697, Dec. 15, 1989, as amended at 61 FR 46212, Sept. 5, 1995]

**§ 61.108 Exemption from the reporting and testing requirements of 40 CFR 61.10.**

All facilities designated under this subpart are exempt from the reporting requirements of 40 CFR 61.10.

**Subpart J—National Emission Standard for Equipment Leaks (Fugitive Emission Sources) of Benzene**

SOURCE: 49 FR 23513, June 6, 1984, unless otherwise noted.

**§ 61.110 Applicability and designation of sources.**

(a) The provisions of this subpart apply to each of the following sources that are intended to operate in benzene service: pumps, compressors, pressure relief devices, sampling connections, systems, open-ended valves or lines, valves, flanges and other connectors, product accumulator vessels, and control devices or systems required by this subpart.

(b) The provisions of this subpart do not apply to sources located in coke by-product plants.

(c)(1) If an owner or operator applies for one of the exemptions in this paragraph, then the owner or operator shall maintain records as required in § 61.246(i).

(2) Any equipment in benzene service that is located at a plant site designed

to produce or use less than 1,000 megagrams of benzene per year is exempt from the requirements of § 61.112.

(3) Any process unit (defined in § 61.241) that has no equipment in benzene service is exempt from the requirements of § 61.112.

(d) While the provisions of this subpart are effective, a source to which this subpart applies that is also subject to the provisions of 40 CFR part 60 only will be required to comply with the provisions of this subpart.

**§ 61.111 Definitions.**

As used in this subpart, all terms not defined herein shall have the meaning given them in the Act, in subpart A of part 61, or in subpart V of part 61, and the following terms shall have the specific meanings given them:

*In benzene service* means that a piece of equipment either contains or contacts a fluid (Liquid or gas) that is at least 10 percent benzene by weight as determined according to the provisions of § 61.245(d). The provisions of § 61.245(d) also specify how to determine that a piece of equipment is not in benzene service.

*Semiannual* means a 6-month period; the first semiannual period concludes on the last day of the last month during the 180 days following initial start-up for new sources; and the first semiannual period concludes on the last day of the last full month during the 180 days after June 6, 1984 for existing sources.

**§ 61.112 Standards.**

(a) Each owner or operator subject to the provisions of this subpart shall comply with the requirements of subpart V of this part.

(b) An owner or operator may elect to comply with the requirements of §§ 61.243–1 and 61.243–2.

(c) An owner or operator may apply to the Administrator for a determination of an alternative means of emission limitation that achieves a reduction in emissions of benzene at least equivalent to the reduction in emissions of benzene achieved by the controls required in this subpart. In doing so, the owner or operator shall comply with requirements of § 61.244.

### Subpart K—National Emission Standards for Radionuclide Emissions From Elemental Phosphorus Plants

SOURCE: 54 FR 51699, Dec. 15, 1989, unless otherwise noted.

#### § 61.120 Applicability.

The provisions of this subpart are applicable to owners or operators of calciners and nodulizing kilns at elemental phosphorus plants.

#### § 61.121 Definitions.

(a) *Elemental phosphorus plant or plant* means any facility that processes phosphate rock to produce elemental phosphorus. A plant includes all buildings, structures, operations, calciners and nodulizing kilns on one contiguous site.

(b) *Calciner or Nodulizing kiln* means a unit in which phosphate rock is heated to high temperatures to remove organic material and/or to convert it to a nodular form. For the purpose of this subpart, calciners and nodulizing kilns are considered to be similar units.

#### § 61.122 Emission standard.

Emissions of polonium-210 to the ambient air from all calciners and nodulizing kilns at an elemental phosphorus plant shall not exceed a total of 2 curies a year; except that compliance with this standard may be conclusively shown if the elemental phosphorus plant:

(a) Installs a Hydro-Sonic® Tandem Nozzle Fixed Throat Free-Jet Scrubber System including four scrubber units,

(b) All four scrubber units are operated continuously with a minimum average over any 6-hour period of 40 inches (water column) of pressure drop across each scrubber during calcining of phosphate shale,

(c) The system is used to scrub emissions from all calciners and/or nodulizing kilns at the plant, and

(d) Total emissions of polonium-210 from the plant do not exceed 4.5 curies per year.

Alternative operating conditions, which can be shown to achieve an overall removal efficiency for emissions of polonium-210 which is equal to or

greater than the efficiency which would be achieved under the operating conditions described in paragraphs (a), (b), and (c) of this section, may be used with prior approval of the Administrator. A facility shall apply for such approval in writing, and the Administrator shall act upon the request within 30 days after receipt of a complete and technically sufficient application.

[56 FR 65943, Dec. 19, 1991]

#### § 61.123 Emission testing.

(a) Each owner or operator of an elemental phosphorus plant shall test emissions from the plant within 90 days of the effective date of this standard and annually thereafter. The Administrator may temporarily or permanently waive the annual testing requirement or increase the frequency of testing, if the Administrator determines that more testing is required.

(b) The Administrator shall be notified at least 30 days prior to an emission test so that EPA may, at its option, observe the test.

(c) An emission test shall be conducted at each operational calciner or nodulizing kiln. If emissions from a calciner or nodulizing kiln are discharged through more than one stack, then an emission test shall be conducted at each stack and the total emission rate from the calciner or kiln shall be the sum of the emission rates from each of the stacks.

(d) Each emission test shall consist of three sampling runs that meet the requirements of § 61.125. The phosphate rock processing rate during each run shall be recorded. An emission rate in curies per metric ton of phosphate rock processed shall be calculated for each run. The average of all three runs shall apply in computing the emission rate for the test. The annual polonium-210 emission rate from a calciner or nodulizing kiln shall be determined by multiplying the measured polonium-210 emission rate in curies per metric ton of phosphate rock processed by the annual phosphate rock processing rate in metric tons. In determining the annual phosphate rock processing rate, the values used for operating hours and operating capacity shall be values that will maximize the expected processing rate. For determining compliance with

the emission standard of § 61.122, the total annual emission rate is the sum of the annual emission rates for all operating calciners and nodulizing kilns.

(e) If the owner or operator changes his operation in such a way as to increase his emissions of polonium-210, such as changing the type of rock processed, the temperature of the calciners or kilns, or increasing the annual phosphate rock processing rate, then a new emission test, meeting the requirements of this section, shall be conducted within 45 days under these conditions.

(f) Each owner or operator of an elemental phosphorus plant shall furnish the Administrator with a written report of the results of the emission test within 60 days of conducting the test. The report must provide the following information:

(1) The name and location of the facility.

(2) The name of the person responsible for the operation of the facility and the name of the person preparing the report (if different).

(3) A description of the effluent controls that are used on each stack, vent, or other release point and an estimate of the efficiency of each device.

(4) The results of the testing, including the results of each sampling run completed.

(5) The values used in calculating the emissions and the source of these data.

(6) Each report shall be signed and dated by a corporate officer in charge of the facility and contain the following declaration immediately above the signature line: "I certify under penalty of law that I have personally examined and am familiar with the information submitted herein and based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment. See, 18 U.S.C. 1001."

#### § 61.124 Recordkeeping requirements.

The owner or operator of any plant must maintain records documenting the source of input parameters including the results of all measurements

upon which they are based, the calculations and/or analytical methods used to derive values for input parameters, and the procedure used in emission testing. This documentation should be sufficient to allow an independent auditor to verify the accuracy of the results of the emission testing. These records must be kept at the site of the plant for at least five years and, upon request, be made available for inspection by the Administrator, or his authorized representative.

#### § 61.125 Test methods and procedures.

(a) Each owner or operator of a source required to test emissions under § 61.123, unless an equivalent or alternate method has been approved by the Administrator, shall use the following test methods:

(1) Test Method 1 of appendix A to 40 CFR part 60 shall be used to determine sample and velocity traverses;

(2) Test Method 2 of appendix A to 40 CFR part 60 shall be used to determine velocity and volumetric flow rate;

(3) Test Method 3 of appendix A to 40 CFR part 60 shall be used for gas analysis;

(4) Test Method 5 of appendix A to 40 CFR part 60 shall be used to collect particulate matter containing the polonium-210; and

(5) Test Method 111 of appendix B to 40 CFR part 61 shall be used to determine the polonium-210 emissions.

#### § 61.126 Monitoring of operations.

(a) The owner or operator of any source subject to this subpart using a wet-scrubbing emission control device shall install, calibrate, maintain, and operate a monitoring device for the continuous measurement and recording of the pressure drop of the gas stream across each scrubber. The monitoring device must be certified by the manufacturer to be accurate within  $\pm 250$  pascal ( $\pm 1$  inch of water). The owner or operator of any source subject to this subpart using a wet-scrubbing emission control device shall also install, calibrate, maintain, and operate a monitoring device for the continuous measurement and recording of the scrubber

fluid flow rate. These continuous measurement recordings shall be maintained at the source and made available for inspection by the Administrator, or his authorized representative, for a minimum of 5 years.

(b) The owner or operator of any source subject to this subpart using an electrostatic precipitator control device shall install, calibrate, maintain, and operate a monitoring device for the continuous measurement and recording of the primary and secondary current and the voltage in each electric field. These continuous measurement recordings shall be maintained at the source and made available for inspection by the Administrator, or his authorized representative, for a minimum of 5 years.

[56 FR 65943, Dec. 19, 1991]

**§ 61.127 Exemption from the reporting and testing requirements of 40 CFR 61.10.**

All facilities designated under this subpart are exempt from the reporting requirements of 40 CFR 61.10.

**Subpart L—National Emission Standard for Benzene Emissions from Coke By-Product Recovery Plants**

SOURCE: 54 FR 38073, Sept. 14, 1989, unless otherwise noted.

**§ 61.130 Applicability, designation of sources, and delegation of authority.**

(a) The provisions of this subpart apply to each of the following sources at furnace and foundry coke by-product recovery plants: tar decanters, tar storage tanks, tar-intercepting sumps, flushing-liquor circulation tanks, light-oil sumps, light-oil condensers, light-oil decanters, wash-oil decanters, wash-oil circulation tanks, naphthalene processing, final coolers, final-cooler cooling towers, and the following equipment that are intended to operate in benzene service: pumps, valves, exhausters, pressure relief devices, sampling connection systems, open-ended valves or lines, flanges or other connectors, and control devices or systems required by § 61.135.

(b) The provisions of this subpart also apply to benzene storage tanks, BTX storage tanks, light-oil storage tanks, and excess ammonia-liquor storage tanks at furnace coke by-product recovery plants.

(c) In delegating implementation and enforcement authority to a State under section 112 of the Act, the authorities contained in paragraph (d) of this section shall be retained by the Administrator and not transferred to a State.

(d) Authorities that will not be delegated to States: § 61.136(d).

[54 FR 51699, Dec. 15, 1989, as amended at 56 FR 47406, Sept. 19, 1991]

**§ 61.131 Definitions.**

As used in this subpart, all terms not defined herein shall have the meaning given them in the Act, in subpart A of part 61, and in subpart V of part 61. The following terms shall have the specific meanings given them:

*Annual coke production* means the coke produced in the batteries connected to the coke by-product recovery plant over a 12-month period. The first 12-month period concludes on the first December 31 that comes at least 12 months after the effective date or after the date of initial startup if initial startup is after the effective date.

*Benzene storage tank* means any tank, reservoir, or container used to collect or store refined benzene.

*BTX storage tank* means any tank, reservoir, or container used to collect or store benzene-toluene-xylene or other light-oil fractions.

*Car seal* means a seal that is placed on the device used to change the position of a valve (e.g., from open to closed) such that the position of the valve cannot be changed without breaking the seal and requiring the replacement of the old seal, once broken, with a new seal.

*Coke by-product recovery plant* means any plant designed and operated for the separation and recovery of coal tar derivatives (by-products) evolved from coal during the coking process of a coke oven battery.

*Equipment* means each pump, valve, exhauster, pressure relief device, sampling connection system, open-ended

valve or line, and flange or other connector in benzene service.

*Excess ammonia-liquor storage tank* means any tank, reservoir, or container used to collect or store a flushing liquor solution prior to ammonia or phenol recovery.

*Exhauster* means a fan located between the inlet gas flange and outlet gas flange of the coke oven gas line that provides motive power for coke oven gases.

*Foundry coke* means coke that is produced from raw materials with less than 26 percent volatile material by weight and that is subject to a coking period of 24 hours or more. Percent volatile material of the raw materials (by weight) is the weighted average percent volatile material of all raw materials (by weight) charged to the coke oven per coking cycle.

*Foundry coke by-product recovery plant* means a coke by-product recovery plant connected to coke batteries whose annual coke production is at least 75 percent foundry coke.

*Flushing-liquor circulation tank* means any vessel that functions to store or contain flushing liquor that is separated from the tar in the tar decanter and is recirculated as the cooled liquor to the gas collection system.

*Furnace coke* means coke produced in by-product ovens that is not foundry coke.

*Furnace coke by-product recovery plant* means a coke by-product recovery plant that is not a foundry coke by-product recovery plant.

*In benzene service* means a piece of equipment, other than an exhauster, that either contains or contacts a fluid (liquid or gas) that is at least 10 percent benzene by weight or any exhauster that either contains or contacts a fluid (liquid or gas) at least 1 percent benzene by weight as determined by the provisions of § 61.137(b). The provisions of § 61.137(b) also specify how to determine that a piece of equipment is not in benzene service.

*Light-oil condenser* means any unit in the light-oil recovery operation that functions to condense benzene-containing vapors.

*Light-oil decanter* means any vessel, tank, or other type of device in the light-oil recovery operation that func-

tions to separate light oil from water downstream of the light-oil condenser. A light-oil decanter also may be known as a light-oil separator.

*Light-oil storage tank* means any tank, reservoir, or container used to collect or store crude or refined light-oil.

*Light-oil sump* means any tank, pit, enclosure, or slop tank in light-oil recovery operations that functions as a wastewater separation device for hydrocarbon liquids on the surface of the water.

*Naphthalene processing* means any operations required to recover naphthalene including the separation, refining, and drying of crude or refined naphthalene.

*Non-regenerative carbon adsorber* means a series, over time, of non-regenerative carbon beds applied to a single source or group of sources, where non-regenerative carbon beds are carbon beds that are either never regenerated or are moved from their location for regeneration.

*Process vessel* means each tar decanter, flushing-liquor circulation tank, light-oil condenser, light-oil decanter, wash-oil decanter, or wash-oil circulation tank.

*Regenerative carbon adsorber* means a carbon adsorber applied to a single source or group of sources, in which the carbon beds are regenerated without being moved from their location.

*Semiannual* means a 6-month period; the first semiannual period concludes on the last day of the last full month during the 180 days following initial startup for new sources; the first semiannual period concludes on the last day of the last full month during the 180 days after the effective date of the regulation for existing sources.

*Tar decanter* means any vessel, tank, or container that functions to separate heavy tar and sludge from flushing liquor by means of gravity, heat, or chemical emulsion breakers. A tar decanter also may be known as a flushing-liquor decanter.

*Tar storage tank* means any vessel, tank, reservoir, or other type of container used to collect or store crude tar or tar-entrained naphthalene, except for tar products obtained by distillation, such as coal tar pitch, creosotes,

or carbolic oil. This definition also includes any vessel, tank, reservoir, or container used to reduce the water content of the tar by means of heat, residence time, chemical emulsion breakers, or centrifugal separation. A tar storage tank also may be known as a tar-dewatering tank.

*Tar-intercepting sump* means any tank, pit, or enclosure that serves to receive or separate tars and aqueous condensate discharged from the primary cooler. A tar-intercepting sump also may be known as a primary-cooler decanter.

*Vapor incinerator* means any enclosed combustion device that is used for destroying organic compounds and does not necessarily extract energy in the form of steam or process heat.

*Wash-oil circulation tank* means any vessel that functions to hold the wash oil used in light-oil recovery operations or the wash oil used in the wash-oil final cooler.

*Wash-oil decanter* means any vessel that functions to separate, by gravity, the condensed water from the wash oil received from a wash-oil final cooler or from a light-oil scrubber.

[54 FR 38073, Sept. 14, 1989, as amended at 56 FR 47406, Sept. 19, 1991]

**§61.132 Standard: Process vessels, storage tanks, and tar-intercepting sumps.**

(a)(1) Each owner or operator of a furnace or a foundry coke byproduct recovery plant shall enclose and seal all openings on each process vessel, tar storage tank, and tar-intercepting sump.

(2) The owner or operator shall duct gases from each process vessel, tar storage tank, and tar-intercepting sump to the gas collection system, gas distribution system, or other enclosed point in the by-product recovery process where the benzene in the gas will be recovered or destroyed. This control system shall be designed and operated for no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background and visual inspections, as determined by the methods specified in §61.245(c). This system can be designed as a closed, positive pressure, gas blanketing system.

(i) Except, the owner or operator may elect to install, operate, and maintain a pressure relief device, vacuum relief device, an access hatch, and a sampling port on each process vessel, tar storage tank, and tar-intercepting sump. Each access hatch and sampling port must be equipped with a gasket and a cover, seal, or lid that must be kept in a closed position at all times, unless in actual use.

(ii) The owner or operator may elect to leave open to the atmosphere the portion of the liquid surface in each tar decanter necessary to permit operation of a sludge conveyor. If the owner or operator elects to maintain an opening on part of the liquid surface of the tar decanter, the owner or operator shall install, operate, and maintain a water leg seal on the tar decanter roof near the sludge discharge chute to ensure enclosure of the major portion of liquid surface not necessary for the operation of the sludge conveyor.

(b) Following the installation of any control equipment used to meet the requirements of paragraph (a) of this section, the owner or operator shall monitor the connections and seals on each control system to determine if it is operating with no detectable emissions, using Reference Method 21 (40 CFR part 60, appendix A) and procedures specified in §61.245(c), and shall visually inspect each source (including sealing materials) and the ductwork of the control system for evidence of visible defects such as gaps or tears. This monitoring and inspection shall be conducted on a semiannual basis and at any other time after the control system is repressurized with blanketing gas following removal of the cover or opening of the access hatch.

(1) If an instrument reading indicates an organic chemical concentration more than 500 ppm above a background concentration, as measured by Reference Method 21, a leak is detected.

(2) If visible defects such as gaps in sealing materials are observed during a visual inspection, a leak is detected.

(3) When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected.

(4) A first attempt at repair of any leak or visible defect shall be made no

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later than 5 calendar days after each leak is detected.

(c) Following the installation of any control system used to meet the requirements of paragraph (a) of this section, the owner or operator shall conduct a maintenance inspection of the control system on an annual basis for evidence of system abnormalities, such as blocked or plugged lines, sticking valves, plugged condensate traps, and other maintenance defects that could result in abnormal system operation. The owner or operator shall make a first attempt at repair within 5 days, with repair within 15 days of detection.

(d) Each owner or operator of a furnace coke by-product recovery plant also shall comply with the requirements of paragraphs (a)-(c) of this section for each benzene storage tank, BTX storage tank, light-oil storage tank, and excess ammonia-liquor storage tank.

**§ 61.133 Standard: Light-oil sumps.**

(a) Each owner or operator of a light-oil sump shall enclose and seal the liquid surface in the sump to form a closed system to contain the emissions.

(1) Except, the owner or operator may elect to install, operate, and maintain a vent on the light-oil sump cover. Each vent pipe must be equipped with a water leg seal, a pressure relief device, or vacuum relief device.

(2) Except, the owner or operator may elect to install, operate, and maintain an access hatch on each light-oil sump cover. Each access hatch must be equipped with a gasket and a cover, seal, or lid that must be kept in a closed position at all times, unless in actual use.

(3) The light-oil sump cover may be removed for periodic maintenance but must be replaced (with seal) at completion of the maintenance operation.

(b) The venting of steam or other gases from the by-product process to the light-oil sump is not permitted.

(c) Following the installation of any control equipment used to meet the requirements of paragraph (a) of this section, the owner or operator shall monitor the connections and seals on each control system to determine if it is operating with no detectable emissions, using Reference Method 21 (40 CFR part

60, appendix A) and the procedures specified in § 61.245(c), and shall visually inspect each source (including sealing materials) for evidence of visible defects such as gaps or tears. This monitoring and inspection shall be conducted semiannually and at any other time the cover is removed.

(1) If an instrument reading indicates an organic chemical concentration more than 500 ppm above a background concentration, as measured by Reference Method 21, a leak is detected.

(2) If visible defects such as gaps in sealing materials are observed during a visual inspection, a leak is detected.

(3) When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected.

(4) A first attempt at repair of any leak or visible defect shall be made no later than 5 calendar days after each leak is detected.

**§ 61.134 Standard: Naphthalene processing, final coolers, and final-cooler cooling towers.**

(a) No ("zero") emissions are allowed from naphthalene processing, final coolers and final-cooler cooling towers at coke by-product recovery plants.

**§ 61.135 Standard: Equipment leaks.**

(a) Each owner or operator of equipment in benzene service shall comply with the requirements of 40 CFR part 61, subpart V, except as provided in this section.

(b) The provisions of § 61.242-3 and § 61.242-9 of subpart V do not apply to this subpart.

(c) Each piece of equipment in benzene service to which this subpart applies shall be marked in such a manner that it can be distinguished readily from other pieces of equipment in benzene service.

(d) Each exhauster shall be monitored quarterly to detect leaks by the methods specified in § 61.245(b) except as provided in § 61.136(d) and paragraphs (e)-(g) of this section.

(1) If an instrument reading of 10,000 ppm or greater is measured, a leak is detected.

(2) When a leak is detected, it shall be repaired as soon as practicable, but no later than 15 calendar days after it

is detected, except as provided in §61.242-10 (a) and (b). A first attempt at repair shall be made no later than 5 calendar days after each leak is detected.

(e) Each exhauster equipped with a seal system that includes a barrier fluid system and that prevents leakage of process fluids to the atmosphere is exempt from the requirements of paragraph (d) of this section provided the following requirements are met:

(1) Each exhauster seal system is:

(i) Operated with the barrier fluid at a pressure that is greater than the exhauster stuffing box pressure; or

(ii) Equipped with a barrier fluid system that is connected by a closed vent system to a control device that complies with the requirements of §61.242-11; or

(iii) Equipped with a system that purges the barrier fluid into a process stream with zero benzene emissions to the atmosphere.

(2) The barrier fluid is not in benzene service.

(3) Each barrier fluid system shall be equipped with a sensor that will detect failure of the seal system, barrier fluid system, or both.

(4)(i) Each sensor as described in paragraph (e)(3) of this section shall be checked daily or shall be equipped with an audible alarm.

(ii) The owner or operator shall determine, based on design considerations and operating experience, a criterion that indicates failure of the seal system, the barrier fluid system, or both.

(5) If the sensor indicates failure of the seal system, the barrier system, or both (based on the criterion determined under paragraph (e)(4)(ii) of this section), a leak is detected.

(6)(i) When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected, except as provided in §61.242-10.

(ii) A first attempt at repair shall be made no later than 5 calendar days after each leak is detected.

(f) An exhauster is exempt from the requirements of paragraph (d) of this section if it is equipped with a closed vent system capable of capturing and transporting any leakage from the seal

or seals to a control device that complies with the requirements of §61.242-11 except as provided in paragraph (g) of this section.

(g) Any exhauster that is designated, as described in §61.246(e) for no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, is exempt from the requirements of paragraph (d) of this section if the exhauster:

(1) Is demonstrated to be operating with no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, as measured by the methods specified in §61.245(c); and

(2) Is tested for compliance with paragraph (g)(1) of this section initially upon designation, annually, and at other times requested by the Administrator.

(h) Any exhauster that is in vacuum service is excluded from the requirements of this subpart if it is identified as required in §61.246(e)(5).

**§61.136 Compliance provisions and alternative means of emission limitation.**

(a) Each owner or operator subject to the provisions of this subpart shall demonstrate compliance with the requirements of §§61.132 through 61.135 for each new and existing source, except as provided under §§61.243-1 and 61.243-2.

(b) Compliance with this subpart shall be determined by a review of records, review of performance test results, inspections, or any combination thereof, using the methods and procedures specified in §61.137.

(c) On the first January 1 after the first year that a plant's annual coke production is less than 75 percent foundry coke, the coke by-product recovery plant becomes a furnace coke by-product recovery plant and shall comply with 61.132(d). Once a plant becomes a furnace coke by-product recovery plant, it will continue to be considered a furnace coke by-product recovery plant, regardless of the coke production in subsequent years.

(d)(1) An owner or operator may request permission to use an alternative means of emission limitation to meet the requirements in §§61.132, 61.133, and

61.135 of this subpart and §§61.242–2, –5, –6, –7, –8, and –11 of subpart V. Permission to use an alternative means of emission limitation shall be requested as specified in §61.12(d).

(2) When the Administrator evaluates requests for permission to use alternative means of emission limitation for sources subject to §§61.132 and 61.133 (except tar decanters) the Administrator shall compare test data for the means of emission limitation to a benzene control efficiency of 98 percent. For tar decanters, the Administrator shall compare test data for the means of emission limitation to a benzene control efficiency of 95 percent.

(3) For any requests for permission to use an alternative to the work practices required under §61.135, the provisions of §61.244(c) shall apply.

**§61.137 Test methods and procedures.**

(a) Each owner or operator subject to the provisions of this subpart shall comply with the requirements in §61.245 of 40 CFR part 61, subpart V.

(b) To determine whether or not a piece of equipment is in benzene service, the methods in §61.245(d) shall be used, except that, for exhausters, the percent benzene shall be 1 percent by weight, rather than the 10 percent by weight described in §61.245(d).

**§61.138 Recordkeeping and reporting requirements.**

(a) The following information pertaining to the design of control equipment installed to comply with §§61.132 through 61.134 shall be recorded and kept in a readily accessible location:

(1) Detailed schematics, design specifications, and piping and instrumentation diagrams.

(2) The dates and descriptions of any changes in the design specifications.

(b) The following information pertaining to sources subject to §61.132 and sources subject to §61.133 shall be recorded and maintained for 2 years following each semiannual (and other) inspection and each annual maintenance inspection:

(1) The date of the inspection and the name of the inspector.

(2) A brief description of each visible defect in the source or control equip-

ment and the method and date of repair of the defect.

(3) The presence of a leak, as measured using the method described in §61.245(c). The record shall include the date of attempted and actual repair and method of repair of the leak.

(4) A brief description of any system abnormalities found during the annual maintenance inspection, the repairs made, the date of attempted repair, and the date of actual repair.

(c) Each owner or operator of a source subject to §61.135 shall comply with §61.246.

(d) For foundry coke by-product recovery plants, the annual coke production of both furnace and foundry coke shall be recorded and maintained for 2 years following each determination.

(e)(1) An owner or operator of any source to which this subpart applies shall submit a statement in writing notifying the Administrator that the requirements of this subpart and 40 CFR 61, subpart V, have been implemented.

(2) In the case of an existing source or a new source that has an initial startup date preceding the effective date, the statement is to be submitted within 90 days of the effective date, unless a waiver of compliance is granted under §61.11, along with the information required under §61.10. If a waiver of compliance is granted, the statement is to be submitted on a date scheduled by the Administrator.

(3) In the case of a new source that did not have an initial startup date preceding the effective date, the statement shall be submitted with the application for approval of construction, as described under §61.07.

(4) The statement is to contain the following information for each source:

(i) Type of source (e.g., a light-oil sump or pump).

(ii) For equipment in benzene service, equipment identification number and process unit identification: percent by weight benzene in the fluid at the equipment; and process fluid state in the equipment (gas/vapor or liquid).

(iii) Method of compliance with the standard (e.g., “gas blanketing,” “monthly leak detection and repair,” or “equipped with dual mechanical seals”). This includes whether the plant plans to be a furnace or foundry

coke by-product recovery plant for the purposes of § 61.132(d).

(f) A report shall be submitted to the Administrator semiannually starting 6 months after the initial reports required in § 61.138(e) and § 61.10, which includes the following information:

(1) For sources subject to § 61.132 and sources subject to § 61.133,

(i) A brief description of any visible defect in the source or ductwork,

(ii) The number of leaks detected and repaired, and

(iii) A brief description of any system abnormalities found during each annual maintenance inspection that occurred in the reporting period and the repairs made.

(2) For equipment in benzene service subject to § 61.135(a), information required by § 61.247(b).

(3) For each exhauster subject to § 61.135 for each quarter during the semiannual reporting period,

(i) The number of exhausters for which leaks were detected as described in § 61.135 (d) and (e)(5),

(ii) The number of exhausters for which leaks were repaired as required in § 61.135 (d) and (e)(6),

(iii) The results of performance tests to determine compliance with § 61.135(g) conducted within the semiannual reporting period.

(4) A statement signed by the owner or operator stating whether all provisions of 40 CFR part 61, subpart L, have been fulfilled during the semiannual reporting period.

(5) For foundry coke by-product recovery plants, the annual coke production of both furnace and foundry coke, if determined during the reporting period.

(6) Revisions to items reported according to paragraph (e) of this section if changes have occurred since the initial report or subsequent revisions to the initial report.

NOTE: Compliance with the requirements of § 61.10(c) is not required for revisions documented under this paragraph.

(g) In the first report submitted as required in § 61.138(e), the report shall include a reporting schedule stating the months that semiannual reports shall be submitted. Subsequent reports shall be submitted according to that schedule unless a revised schedule has

been submitted in a previous semiannual report.

(h) An owner or operator electing to comply with the provisions of §§ 61.243-1 and 61.243-2 shall notify the Administrator of the alternative standard selected 90 days before implementing either of the provisions.

(i) An application for approval of construction or modification, as required under §§ 61.05(a) and 61.07, will not be required for sources subject to 61.135 if:

(1) The new source complies with § 61.135, and

(2) In the next semiannual report required by § 61.138(f), the information described in § 61.138(e)(4) is reported.

[55 FR 38073, Sept. 14, 1990; 55 FR 14037, Apr. 13, 1990]

**§ 61.139 Provisions for alternative means for process vessels, storage tanks, and tar-intercepting sumps.**

(a) As an alternative means of emission limitation for a source subject to § 61.132(a)(2) or § 61.132(d), the owner or operator may route gases from the source through a closed vent system to a carbon adsorber or vapor incinerator that is at least 98 percent efficient at removing benzene from the gas stream.

(1) The provisions of § 61.132(a)(1) and § 61.132(a)(2)(i) and (ii) shall apply to the source.

(2) The seals on the source and closed vent system shall be designed and operated for no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background and visual inspections, as determined by the methods specified in § 61.245(c).

(3) The provisions of § 61.132(b) shall apply to the seals and closed vent system.

(b) For each carbon adsorber, the owner or operator shall adhere to the following practices:

(1) Benzene captured by each carbon adsorber shall be recycled or destroyed in a manner that prevents benzene from being emitted to the atmosphere.

(2) Carbon removed from each carbon adsorber shall be regenerated or destroyed in a manner that prevents benzene from being emitted to the atmosphere.

(3) For each regenerative carbon adsorber, the owner or operator shall

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initiate regeneration of the spent carbon bed and vent the emissions from the source to a regenerated carbon bed no later than when the benzene concentration or organic vapor concentration level in the adsorber outlet vent reaches the maximum concentration point, as determined in § 61.139(h).

(4) For each non-regenerative carbon adsorber, the owner or operator shall replace the carbon at the scheduled replacement time, or as soon as practicable (but not later than 16 hours) after an exceedance of the maximum concentration point is detected, whichever is sooner.

(i) For each non-regenerative carbon adsorber, the scheduled replacement time means the day that is estimated to be 90 percent of the demonstrated bed life, as defined in § 61.139(h)(5).

(ii) For each non-regenerative carbon adsorber, an exceedance of the maximum concentration point shall mean any concentration greater than or

equal to the maximum concentration point as determined in § 61.139(h).

(c) Compliance with the provisions of this section shall be determined as follows:

(1) For each carbon adsorber and vapor incinerator, the owner or operator shall demonstrate compliance with the efficiency limit by a compliance test as specified in § 61.13 and § 61.139(g). If a waiver of compliance has been granted under § 61.11, the deadline for conducting the initial compliance test shall be incorporated into the terms of the waiver. The benzene removal efficiency rate for each carbon adsorber and vapor incinerator shall be calculated as in the following equation:

$$E = \frac{\sum_{i=1}^n Q_{bi}C_{bi} - \sum_{j=1}^m Q_{aj}C_{aj}}{\sum_{i=1}^n Q_{bi}C_{bi}} \times 100$$

Where:

E=percent removal of benzene.

$C_{aj}$ =concentration of benzene in vents after the control device, parts per million (ppm).

$C_{bi}$ =concentration of benzene in vents before the control device, ppm.

$Q_{aj}$ =volumetric flow rate in vents after the control device, standard cubic meters/minute (scm/min).

$Q_{bi}$ =volumetric flow rate in vents before the control device, scm/min.

m=number of vents after the control device.

n=number of vents before the control device.

(2) Compliance with all other provisions in this section shall be determined by inspections or the review of records and reports.

(d) For each regenerative carbon adsorber, the owner or operator shall install and operate a monitoring device that continuously indicates and records either the concentration of benzene or the concentration level of organic compounds in the outlet vent of the carbon adsorber. The monitoring device shall be installed, calibrated, maintained and operated in accordance with the manufacturer's specifications.

(1) Measurement of benzene concentration shall be made according to § 61.139(g)(2).

(2) All measurements of organic compound concentration levels shall be reasonable indicators of benzene concentration.

(i) The monitoring device for measuring organic compound concentration levels shall be based on one of the following detection principles: Infrared absorption, flame ionization, catalytic oxidation, photoionization, or thermal conductivity.

(ii) The monitoring device shall meet the requirements of part 60, appendix A, method 21, sections 2, 3, 4.1, 4.2, and 4.4. For the purpose of the application of method 21 to this section, the words "leak definition" shall be the maximum concentration point, which would be estimated until it is established under § 61.139(h). The calibration gas shall either be benzene or methane and shall be at a concentration associated with 125 percent of the expected organic compound concentration level for the carbon adsorber outlet vent.

(e) For each non-regenerative carbon adsorber, the owner or operator shall monitor either the concentration of benzene or the concentration level of organic compounds at the outlet vent of the adsorber. The monitoring device shall be calibrated, operated and maintained in accordance with the manufacturer's specifications.

(1) Measurements of benzene concentration shall be made according to §61.139(g)(2). The measurement shall be conducted over at least one 5-minute interval during which flow into the carbon adsorber is expected to occur.

(2) All measurements of organic compound concentration levels shall be reasonable indicators of benzene concentration.

(i) The monitoring device for measuring organic compound concentration levels shall meet the requirements of paragraphs §61.139(d)(2) (i) and (ii).

(ii) The probe inlet of the monitoring device shall be placed at approximately the center of the carbon adsorber outlet vent. The probe shall be held there for at least 5 minutes during which flow into the carbon adsorber is expected to occur. The maximum reading during that period shall be used as the measurement.

(3) Monitoring shall be performed at least once within the first 7 days after replacement of the carbon bed occurs, and monthly thereafter until 10 days before the scheduled replacement time, at which point monitoring shall be done daily, except as specified in paragraphs (e)(4) and (e)(5) of this section.

(4) If an owner or operator detects an exceedance of the maximum concentration point during the monthly monitoring or on the first day of daily monitoring as prescribed in paragraph (e)(3) of this section, then, after replacing the bed, the owner or operator shall begin the daily monitoring of the replacement carbon bed on the day after the last scheduled monthly monitoring before the exceedance was detected, or 10 days before the exceedance was detected, whichever is longer.

(5) If an owner or operator detects an exceedance of the maximum concentration point during the daily monitoring as prescribed in paragraph (e)(3) of this section, except on the first day, then, after replacing the bed, the owner or

operator shall begin the daily monitoring of the replacement carbon bed 10 days before the exceedance was detected.

(6) If the owner or operator is monitoring on the schedule required in paragraph (e)(4) or paragraph (e)(5) of this section, and the scheduled replacement time is reached without exceeding the maximum concentration point, the owner or operator may return to the monitoring schedule in paragraph (e)(3) of this section for subsequent carbon beds.

NOTE: This note provides an example of the monitoring schedules in paragraphs (e)(3), (e)(4) and (e)(5) of this section. Assume that the scheduled replacement time for a non-regenerative carbon adsorber is the 105th day after installation. According to the monitoring schedule in paragraph (e)(3) of this section, initial monitoring would be done within 7 days after installation, monthly monitoring would be done on the 30th, 60th and 90th days, and daily monitoring would begin on the 95th day after installation. Now assume that an exceedance of the maximum concentration point is detected on the 90th day after installation. On the replacement carbon bed, the owner or operator would begin daily monitoring on the 61st day after installation (i.e., the day after the last scheduled monthly monitoring before the exceedance was detected), according to the requirements in paragraph (e)(4) of this section. If, instead, the exceedance were detected on the first bed on the 95th day, the daily monitoring of the replacement bed would begin on the 85th day after installation (i.e., 10 days before the point in the cycle where the exceedance was detected); this is a second example of the requirements in paragraph (e)(4) of this section. Finally, assume that an exceedance of the maximum concentration point is detected on the 100th day after the first carbon adsorber was installed. According to paragraph (e)(5) of this section, daily monitoring of the replacement bed would begin on the 90th day after installation (i.e., 10 days earlier than when the exceedance was detected on the previous bed). In all of these examples, the initial monitoring of the replacement bed within 7 days of installation and the monthly monitoring would proceed as set out in paragraph (e)(3) of this section until daily monitoring was required.

(f) For each vapor incinerator, the owner or operator shall comply with the monitoring requirements specified below:

(1) Install, calibrate, maintain, and operate according to the manufacturer's specifications a temperature monitoring device equipped with a continuous recorder and having an accuracy of  $\pm 1$  percent of the temperature being monitored expressed in degrees Celsius or  $\pm 0.5^\circ\text{C}$ , whichever is greater.

(i) Where a vapor incinerator other than a catalytic incinerator is used, the temperature monitoring device shall be installed in the firebox.

(ii) Where a catalytic incinerator is used, temperature monitoring devices shall be installed in the gas stream immediately before and after the catalyst bed.

(2) Comply with paragraph (f)(2)(i), paragraph (f)(2)(ii), or paragraph (f)(3)(iii) of this section.

(i) Install, calibrate, maintain and operate according to the manufacturer's specifications a flow indicator that provides a record of vent stream flow to the incinerator at least once every hour for each source. The flow indicator shall be installed in the vent stream from each source at a point closest to the inlet of each vapor incinerator and before being joined with any other vent stream.

(ii) Install, calibrate, maintain and operate according to the manufacturer's specifications a flow indicator that provides a record of vent stream flow away from the vapor incinerator at least once every 15 minutes. The flow indicator shall be installed in each bypass line, immediately downstream of the valve that, if opened, would divert the vent stream away from the vapor incinerator.

(iii) Where a valve that opens a bypass line is secured in the closed position with a car seal or a lock-and-key configuration, a flow indicator is not required. The owner or operator shall perform a visual inspection at least once every month to check the position of the valve and the condition of the car seal or lock-and-key configuration. The owner or operator shall also record the date and duration of each time that the valve was opened and the vent stream diverted away from the vapor incinerator.

(g) In conducting the compliance tests required in §61.139(c), and measurements specified in §61.139(d)(1),

(e)(1) and (h)(3)(ii), the owner or operator shall use as reference methods the test methods and procedures in appendix A to 40 CFR part 60, or other methods as specified in this paragraph, except as specified in §61.13.

(1) For compliance tests, as described in §61.139(c)(1), the following provisions apply.

(i) All tests shall be run under representative emission concentration and vent flow rate conditions. For sources with intermittent flow rates, representative conditions shall include typical emission surges (for example, during the loading of a storage tank).

(ii) Each test shall consist of three separate runs. These runs will be averaged to yield the volumetric flow rates and benzene concentrations in the equation in §61.139(c)(1). Each run shall be a minimum of 1 hour.

(A) For each regenerative carbon adsorber, each run shall take place in one adsorption cycle, to include a minimum of 1 hour of sampling immediately preceding the initiation of carbon bed regeneration.

(B) For each non-regenerative carbon adsorber, all runs can occur during one adsorption cycle.

(iii) The measurements during the runs shall be paired so that the inlet and outlet to the control device are measured simultaneously.

(iv) Method 1 or 1A shall be used as applicable for locating measurement sites.

(v) Method 2, 2A, or 2D shall be used as applicable for measuring vent flow rates.

(vi) Method 18 shall be used for determining the benzene concentrations ( $C_{aj}$  and  $C_{bi}$ ). Either follow section 7.1, "Integrated Bag Sampling and Analysis," or section 7.2, "Direct Interface Sampling and Analysis Procedure." A separation column constructed of stainless steel, 1.83 m by 3.2 mm, containing 10 percent 1,2,3-tris (2-cyanoethoxy) propane (TECP) on 80/100 mesh Chromosorb P AW, with a column temperature of  $80^\circ\text{C}$ , a detector temperature of  $225^\circ\text{C}$ , and a flow rate of approximately 20 ml/min, may produce adequate separations. The analyst can use other columns, provided that the precision and accuracy of the analysis of benzene standards is not impaired.

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The analyst shall have available for review information confirming that there is adequate resolution of the benzene peak.

(A) If section 7.1 is used, the sample rate shall be adjusted to maintain a constant proportion to vent flow rate.

(B) If section 7.2 is used, then each performance test run shall be conducted in intervals of 5 minutes. For each interval "t," readings from each measurement shall be recorded, and the flow rate ( $Q_{aj}$  or  $Q_{bi}$ ) and the corresponding benzene concentration ( $C_{aj}$  or  $C_{bi}$ ) shall be determined. The sampling system shall be constructed to include a mixing chamber of a volume equal to 5 times the sampling flow rate per minute. Each analysis performed by the chromatograph will then represent an averaged emission value for a 5-minute time period. The vent flow rate readings shall be timed to account for the total sample system residence time. A dual column, dual detector chromatograph can be used to achieve an analysis interval of 5 minutes. The individual benzene concentrations shall be vent flow rate weighted to determine sample run average concentrations. The individual vent flow rates shall be time averaged to determine sample run average flow rates.

(2) For testing the benzene concentration at the outlet vent of the carbon adsorber as specified under §§61.139(d)(1), (e)(1) and (h)(3)(ii), the following provisions apply.

(i) The measurement shall be conducted over one 5-minute period.

(ii) The requirements in §61.139(g)(1)(i) shall apply to the extent practicable.

(iii) The requirements in §61.139(g)(1)(vi) shall apply. Section 7.2 of method 18 shall be used as described in §61.139(g)(1)(vi)(B) for benzene concentration measurements.

(h) For each carbon adsorber, the maximum concentration point shall be expressed either as a benzene concentration or organic compound concentration level, whichever is to be indicated by the monitoring device chosen under §61.139 (d) or (e).

(1) For each regenerative carbon adsorber, the owner or operator shall determine the maximum concentration point at the following times:

(i) No later than the deadline for the initial compliance test as specified in §61.139(c)(1);

(ii) At the request of the Administrator; and

(iii) At any time chosen by the owner or operator.

(2) For each non-regenerative carbon adsorber, the owner or operator shall determine the maximum concentration point at the following times:

(i) On the first carbon bed to be installed in the adsorber;

(ii) At the request of the Administrator;

(iii) On the next carbon bed after the maximum concentration point has been exceeded (before the scheduled replacement time) for each of three previous carbon beds in the adsorber since the most recent determination; and

(iv) At any other time chosen by the owner or operator.

(3) The maximum concentration point for each carbon adsorber shall be determined through the simultaneous measurement of the outlet of the carbon adsorber with the monitoring device and method 18, except as allowed in paragraph (h)(4) of this section.

(i) Several data points shall be collected according to a schedule determined by the owner or operator. The schedule shall be designed to take frequent samples near the expected maximum concentration point.

(ii) Each data point shall consist of one 5-minute benzene concentration measurement using method 18 as specified in §61.139(g)(2), and of a simultaneous measurement by the monitoring device. The monitoring device measurement shall be conducted according to §61.139 (d) or (e), whichever is applicable.

(iii) The maximum concentration point shall be the concentration level, as indicated by the monitoring device, for the last data point at which the benzene concentration is less than 2 percent of the average value of the benzene concentration at the inlet to the carbon adsorber during the most recent compliance test.

(4) If the maximum concentration point is expressed as a benzene concentration, the owner or operator may

determine it by calibrating the monitoring device with benzene at a concentration that is 2 percent of the average benzene concentration measured at the inlet to the carbon adsorber during the most recent compliance test. The reading on the monitoring device corresponding to the calibration concentration shall be the maximum concentration point. This method of determination would affect the owner or operator as follows:

(i) For a regenerative carbon adsorber, the owner or operator is exempt from the provisions in paragraph (h)(3) of this section.

(ii) For a non-regenerative carbon adsorber, the owner or operator is required to collect the data points in paragraph (h)(3) of this section with only the monitoring device, and is exempt from the simultaneous method 18 measurement.

(5) For each non-regenerative carbon adsorber, the demonstrated bed life shall be the carbon bed life, measured in days from the time the bed is installed until the maximum concentration point is reached, for the carbon bed that is used to determine the maximum concentration point.

(i) The following recordkeeping requirements are applicable to owners and operators of control devices subject to §61.139. All records shall be kept updated and in a readily accessible location.

(1) The following information shall be recorded for each control device for the life of the control device:

(i) The design characteristics of the control device and a list of the source or sources vented to it.

(ii) A plan for proper operation, maintenance, and corrective action to achieve at least 98 percent control of benzene emissions.

(iii) The dates and descriptions of any changes in the design specifications or plan.

(iv) For each carbon adsorber, the plan in paragraph (i)(1)(ii) of this section shall include the method for handling captured benzene and removed carbon to comply with §61.139(b) (1) and (2).

(v) For each carbon adsorber for which organic compounds are monitored as provided under §61.139 (d) and

(e), documentation to show that the measurements of organic compound concentrations are reasonable indicators of benzene concentrations.

(2) For each compliance test as specified in §61.139(c)(1), the date of the test, the results of the test, and other data needed to determine emissions shall be recorded as specified in §61.13(g) for at least 2 years or until the next compliance test on the control device, whichever is longer.

(3) For each vapor incinerator, the average firebox temperature of the incinerator (or the average temperature upstream and downstream of the catalyst bed for a catalytic incinerator), measured and averaged over the most recent compliance test shall be recorded for at least 2 years or until the next compliance test on the incinerator, whichever is longer.

(4) For each carbon adsorber, for each determination of a maximum concentration point as specified in §61.139(h), the date of the determination, the maximum concentration point, and data needed to make the determination shall be recorded for at least 2 years or until the next maximum concentration point determination on the carbon adsorber, whichever is longer.

(5) For each carbon absorber, the dates of and data from the monitoring required in §61.139(d) and (e), the date and time of replacement of each carbon bed, the date of each exceedance of the maximum concentration point, and a brief description of the corrective action taken shall be recorded for at least 2 years. Also, the occurrences when the captured benzene or spent carbon are not handled as required in §61.139(b)(1) and (2) shall be recorded for at least 2 years.

(6) For each vapor incinerator, the data from the monitoring required in §61.139(f)(1), the dates of all periods of operation during which the parameter boundaries established during the most recent compliance test are exceeded, and a brief description of the corrective action taken shall be recorded for at least 2 years. A period of operation during which the parameter boundaries are exceeded is a 3-hour period of operation during which:

(i) For each vapor incinerator other than a catalytic incinerator, the average combustion temperature is more than 28°C (50°F) below the average combustion temperature during the most recent performance test.

(ii) For each catalytic incinerator, the average temperature of the vent stream immediately before the catalyst bed is more than 28°C (50°F) below the average temperature of the vent stream during the most recent performance test, or the average temperature difference across the catalyst bed is less than 80 percent of the average temperature difference across the catalyst bed during the most recent performance test.

(7) For each vapor incinerator, the following shall be recorded for at least 2 years:

(i) If subject to § 61.139(f)(2)(i), records of the flow indication, and of all periods when the vent stream is diverted from the vapor incinerator or has no flow rate.

(ii) If subject to § 61.139(f)(2)(ii), records of the flow indication, and of all periods when the vent stream is diverted from the vapor incinerator.

(iii) If subject to § 61.139(f)(2)(iii), records of the conditions found during each monthly inspection, and of each period when the car seal is broken, when the valve position is changed, or when maintenance on the bypass line valve is performed.

(j) The following reporting requirements are applicable to owners or operators of control devices subject to § 61.139:

(1) Compliance tests shall be reported as specified in § 61.13(f).

(2) The following information shall be reported on a quarterly basis. Two of the quarterly reports shall be submitted as part of the semiannual reports required in § 61.138(f).

(i) For each carbon adsorber:

(A) The date and time of detection of each exceedance of the maximum concentration point and a brief description of the time and nature of the corrective action taken.

(B) The date of each time that the captured benzene or removed carbon was not handled as required in § 61.139(b)(1) and (2), and a brief description of the corrective action taken.

(C) The date of each determination of the maximum concentration point, as described in § 61.139(h), and a brief reason for the determination.

(ii) For each vapor incinerator, the date and duration of each exceedance of the boundary parameters recorded under § 61.139(i)(6) and a brief description of the corrective action taken.

(iii) For each vapor incinerator, the date and duration of each period specified as follows:

(A) Each period recorded under § 61.139(i)(7)(i) when the vent stream is diverted from the control device or has no flow rate;

(B) Each period recorded under § 61.139(i)(7)(ii) when the vent stream is diverted from the control device; and

(C) Each period recorded under § 61.139(i)(7)(iii) when the vent stream is diverted from the control device, when the car seal is broken, when the valve is unlocked, or when the valve position has changed.

(iv) For each vapor incinerator, the owner or operator shall specify the method of monitoring chosen under § 61.139(f)(2) in the first quarterly report. Any time the owner or operator changes that choice, he shall specify the change in the first quarterly report following the change.

(3) If, for a given quarter in which no semiannual report is due under § 61.138(f), there is no information to report under § 61.139(j)(2)(i)(A), (j)(2)(i)(B), (j)(2)(ii)(A), and (j)(2)(ii)(B), then the owner or operator may submit a statement to that effect along with the information to be reported under § 61.139(j)(2)(i)(C) in the next semiannual report, rather than submitting a report at the end of the quarter.

[56 FR 47407, Sept. 19, 1991]

### Subpart M—National Emission Standard for Asbestos

AUTHORITY: 42 U.S.C. 7401, 7412, 7414, 7416, 7601.

SOURCE: 49 FR 13661, Apr. 5, 1984, unless otherwise noted.

#### § 61.140 Applicability.

The provisions of this subpart are applicable to those sources specified in

§§ 61.142 through 61.151, 61.154, and 61.155.

[55 FR 48414, Nov. 20, 1990]

**§ 61.141 Definitions.**

All terms that are used in this subpart and are not defined below are given the same meaning as in the Act and in subpart A of this part.

*Active waste disposal site* means any disposal site other than an inactive site.

*Adequately wet* means sufficiently mix or penetrate with liquid to prevent the release of particulates. If visible emissions are observed coming from asbestos-containing material, then that material has not been adequately wetted. However, the absence of visible emissions is not sufficient evidence of being adequately wet.

*Asbestos* means the asbestiform varieties of serpentinite (chrysotile), riebeckite (crocidolite), cummingtonite-grunerite, anthophyllite, and actinolite-tremolite.

*Asbestos-containing waste materials* means mill tailings or any waste that contains commercial asbestos and is generated by a source subject to the provisions of this subpart. This term includes filters from control devices, friable asbestos waste material, and bags or other similar packaging contaminated with commercial asbestos. As applied to demolition and renovation operations, this term also includes regulated asbestos-containing material waste and materials contaminated with asbestos including disposable equipment and clothing.

*Asbestos mill* means any facility engaged in converting, or in any intermediate step in converting, asbestos ore into commercial asbestos. Outside storage of asbestos material is not considered a part of the asbestos mill.

*Asbestos tailings* means any solid waste that contains asbestos and is a product of asbestos mining or milling operations.

*Asbestos waste from control devices* means any waste material that contains asbestos and is collected by a pollution control device.

*Category I nonfriable asbestos-containing material (ACM)* means asbestos-containing packings, gaskets, resilient floor covering, and asphalt roofing

products containing more than 1 percent asbestos as determined using the method specified in appendix E, subpart E, 40 CFR part 763, section 1, Polarized Light Microscopy.

*Category II nonfriable ACM* means any material, excluding Category I nonfriable ACM, containing more than 1 percent asbestos as determined using the methods specified in appendix E, subpart E, 40 CFR part 763, section 1, Polarized Light Microscopy that, when dry, cannot be crumbled, pulverized, or reduced to powder by hand pressure.

*Commercial asbestos* means any material containing asbestos that is extracted from ore and has value because of its asbestos content.

*Cutting* means to penetrate with a sharp-edged instrument and includes sawing, but does not include shearing, slicing, or punching.

*Demolition* means the wrecking or taking out of any load-supporting structural member of a facility together with any related handling operations or the intentional burning of any facility.

*Emergency renovation operation* means a renovation operation that was not planned but results from a sudden, unexpected event that, if not immediately attended to, presents a safety or public health hazard, is necessary to protect equipment from damage, or is necessary to avoid imposing an unreasonable financial burden. This term includes operations necessitated by non-routine failures of equipment.

*Fabricating* means any processing (e.g., cutting, sawing, drilling) of a manufactured product that contains commercial asbestos, with the exception of processing at temporary sites (field fabricating) for the construction or restoration of facilities. In the case of friction products, fabricating includes bonding, debonding, grinding, sawing, drilling, or other similar operations performed as part of fabricating.

*Facility* means any institutional, commercial, public, industrial, or residential structure, installation, or building (including any structure, installation, or building containing condominiums or individual dwelling units operated as a residential cooperative, but excluding residential buildings having four or fewer dwelling units);

any ship; and any active or inactive waste disposal site. For purposes of this definition, any building, structure, or installation that contains a loft used as a dwelling is not considered a residential structure, installation, or building. Any structure, installation or building that was previously subject to this subpart is not excluded, regardless of its current use or function.

*Facility component* means any part of a facility including equipment.

*Friable asbestos material* means any material containing more than 1 percent asbestos as determined using the method specified in appendix E, subpart E, 40 CFR part 763, section 1, Polarized Light Microscopy, that, when dry, can be crumbled, pulverized, or reduced to powder by hand pressure. If the asbestos content is less than 10 percent as determined by a method other than point counting by polarized light microscopy (PLM), verify the asbestos content by point counting using PLM.

*Fugitive source* means any source of emissions not controlled by an air pollution control device.

*Glove bag* means a sealed compartment with attached inner gloves used for the handling of asbestos-containing materials. Properly installed and used, glove bags provide a small work area enclosure typically used for small-scale asbestos stripping operations. Information on glove-bag installation, equipment and supplies, and work practices is contained in the Occupational Safety and Health Administration's (OSHA's) final rule on occupational exposure to asbestos (appendix G to 29 CFR 1926.58).

*Grinding* means to reduce to powder or small fragments and includes mechanical chipping or drilling.

*In poor condition* means the binding of the material is losing its integrity as indicated by peeling, cracking, or crumbling of the material.

*Inactive waste disposal site* means any disposal site or portion of it where additional asbestos-containing waste material has not been deposited within the past year.

*Installation* means any building or structure or any group of buildings or structures at a single demolition or renovation site that are under the control of the same owner or operator (or

owner or operator under common control).

*Leak-tight* means that solids or liquids cannot escape or spill out. It also means dust-tight.

*Malfunction* means any sudden and unavoidable failure of air pollution control equipment or process equipment or of a process to operate in a normal or usual manner so that emissions of asbestos are increased. Failures of equipment shall not be considered malfunctions if they are caused in any way by poor maintenance, careless operation, or any other preventable upset conditions, equipment breakdown, or process failure.

*Manufacturing* means the combining of commercial asbestos—or, in the case of woven friction products, the combining of textiles containing commercial asbestos—with any other material(s), including commercial asbestos, and the processing of this combination into a product. Chlorine production is considered a part of manufacturing.

*Natural barrier* means a natural object that effectively precludes or deters access. Natural barriers include physical obstacles such as cliffs, lakes or other large bodies of water, deep and wide ravines, and mountains. Remoteness by itself is not a natural barrier.

*Nonfriable asbestos-containing material* means any material containing more than 1 percent asbestos as determined using the method specified in appendix E, subpart E, 40 CFR part 763, section 1, Polarized Light Microscopy, that, when dry, cannot be crumbled, pulverized, or reduced to powder by hand pressure.

*Nonscheduled renovation operation* means a renovation operation necessitated by the routine failure of equipment, which is expected to occur within a given period based on past operating experience, but for which an exact date cannot be predicted.

*Outside air* means the air outside buildings and structures, including, but not limited to, the air under a bridge or in an open air ferry dock.

*Owner or operator of a demolition or renovation activity* means any person who owns, leases, operates, controls, or supervises the facility being demolished or renovated or any person who

owns, leases, operates, controls, or supervises the demolition or renovation operation, or both.

*Particulate asbestos material* means finely divided particles of asbestos or material containing asbestos.

*Planned renovation operations* means a renovation operation, or a number of such operations, in which some RACM will be removed or stripped within a given period of time and that can be predicted. Individual nonscheduled operations are included if a number of such operations can be predicted to occur during a given period of time based on operating experience.

*Regulated asbestos-containing material (RACM)* means (a) Friable asbestos material, (b) Category I nonfriable ACM that has become friable, (c) Category I nonfriable ACM that will be or has been subjected to sanding, grinding, cutting, or abrading, or (d) Category II nonfriable ACM that has a high probability of becoming or has become crumbled, pulverized, or reduced to powder by the forces expected to act on the material in the course of demolition or renovation operations regulated by this subpart.

*Remove* means to take out RACM or facility components that contain or are covered with RACM from any facility.

*Renovation* means altering a facility or one or more facility components in any way, including the stripping or removal of RACM from a facility component. Operations in which load-supporting structural members are wrecked or taken out are demolitions.

*Resilient floor covering* means asbestos-containing floor tile, including asphalt and vinyl floor tile, and sheet vinyl floor covering containing more than 1 percent asbestos as determined using polarized light microscopy according to the method specified in appendix E, subpart E, 40 CFR part 763, section 1, Polarized Light Microscopy.

*Roadways* means surfaces on which vehicles travel. This term includes public and private highways, roads, streets, parking areas, and driveways.

*Strip* means to take off RACM from any part of a facility or facility components.

*Structural member* means any load-supporting member of a facility, such as beams and load supporting walls; or

any nonload-supporting member, such as ceilings and nonload-supporting walls.

*Visible emissions* means any emissions, which are visually detectable without the aid of instruments, coming from RACM or asbestos-containing waste material, or from any asbestos milling, manufacturing, or fabricating operation. This does not include condensed, uncombined water vapor.

*Waste generator* means any owner or operator of a source covered by this subpart whose act or process produces asbestos-containing waste material.

*Waste shipment record* means the shipping document, required to be originated and signed by the waste generator, used to track and substantiate the disposition of asbestos-containing waste material.

*Working day* means Monday through Friday and includes holidays that fall on any of the days Monday through Friday.

[49 FR 13661, Apr. 5, 1984; 49 FR 25453, June 21, 1984, as amended by 55 FR 48414, Nov. 20, 1990; 56 FR 1669, Jan. 16, 1991; 60 FR 31920, June 19, 1995]

#### § 61.142 Standard for asbestos mills.

(a) Each owner or operator of an asbestos mill shall either discharge no visible emissions to the outside air from that asbestos mill, including fugitive sources, or use the methods specified by § 61.152 to clean emissions containing particulate asbestos material before they escape to, or are vented to, the outside air.

(b) Each owner or operator of an asbestos mill shall meet the following requirements:

(1) Monitor each potential source of asbestos emissions from any part of the mill facility, including air cleaning devices, process equipment, and buildings that house equipment for material processing and handling, at least once each day, during daylight hours, for visible emissions to the outside air during periods of operation. The monitoring shall be by visual observation of at least 15 seconds duration per source of emissions.

(2) Inspect each air cleaning device at least once each week for proper operation and for changes that signal the potential for malfunction, including, to

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the maximum extent possible without dismantling other than opening the device, the presence of tears, holes, and abrasions in filter bags and for dust deposits on the clean side of bags. For air cleaning devices that cannot be inspected on a weekly basis according to this paragraph, submit to the Administrator, and revise as necessary, a written maintenance plan to include, at a minimum, the following:

- (i) Maintenance schedule.
- (ii) Recordkeeping plan.

(3) Maintain records of the results of visible emissions monitoring and air cleaning device inspections using a format similar to that shown in Figures 1 and 2 and include the following:

- (i) Date and time of each inspection.
- (ii) Presence or absence of visible emissions.
- (iii) Condition of fabric filters, including presence of any tears, holes, and abrasions.

(iv) Presence of dust deposits on clean side of fabric filters.

(v) Brief description of corrective actions taken, including date and time.

(vi) Daily hours of operation for each air cleaning device.

(4) Furnish upon request, and make available at the affected facility during normal business hours for inspection by the Administrator, all records required under this section.

(5) Retain a copy of all monitoring and inspection records for at least 2 years.

(6) Submit quarterly a copy of visible emission monitoring records to the Administrator if visible emissions occurred during the report period. Quarterly reports shall be postmarked by the 30th day following the end of the calendar quarter.

| Date of inspection<br>(mo/day/yr) | Time of inspection<br>(a.m./p.m.) | Air cleaning device or fugitive source designation or number | Visible emissions observed (yes/no), corrective action taken | Daily operating hours | Inspector's initials |
|-----------------------------------|-----------------------------------|--|--|-----------------------|----------------------|
|                                   |                                   |  |  |                       |                      |
|                                   |                                   |  |  |                       |                      |
|                                   |                                   |  |  |                       |                      |
|                                   |                                   |  |  |                       |                      |
|                                   |                                   |  |  |                       |                      |
|                                   |                                   |  |  |                       |                      |
|                                   |                                   |  |  |                       |                      |

Figure 1. Record of Visible Emission Monitoring

|     |   |         |             |        |       |
|-----|---|---------|-------------|--------|-------|
| 1.  | Air cleaning device designation or number                             | _____   | _____       | _____  | _____ |
| 2.  | Date of inspection  | _____   | _____       | _____  | _____ |
| 3.  | Time of inspection  | _____   | _____       | _____  | _____ |
| 4.  | Is air cleaning device operating properly (yes/no)                    | _____   | _____       | _____  | _____ |
| 5.  | Tears, holes, or abrasions in fabric filter (yes/no)                  | _____   | _____       | _____  | _____ |
| 6.  | Dust on clean side of fabric filters (yes/no)                         | _____   | _____       | _____  | _____ |
| 7.  | Other signs of malfunctions or potential malfunctions (yes/no)        | _____   | _____       | _____  | _____ |
| 8.  | Describe other malfunctions or signs of potential malfunctions. _____ |         |             |        |       |
|     | _____   |         |             |        |       |
|     | _____   |         |             |        |       |
| 9.  | Describe corrective action(s) taken. _____                            |         |             |        |       |
|     | _____   |         |             |        |       |
|     | _____   |         |             |        |       |
| 10. | Date and time corrective action taken                                 | _____   | _____       | _____  | _____ |
| 11. | Inspected by  |         |             |        |       |
|     | _____   | _____   | _____       | _____  | _____ |
|     | (Print/Type Name)   | (Title) | (Signature) | (Date) |       |
|     | _____   | _____   | _____       | _____  | _____ |
|     | (Print/Type Name)   | (Title) | (Signature) | (Date) |       |

Figure 2. Air Cleaning Device Inspection Checklist

[55 FR 48416, Nov. 20, 1990]

**§ 61.143 Standard for roadways.**

No person may construct or maintain a roadway with asbestos tailings or asbestos-containing waste material on that roadway, unless, for asbestos tailings.

(a) It is a temporary roadway on an area of asbestos ore deposits (asbestos mine); or

(b) It is a temporary roadway at an active asbestos mill site and is encapsulated with a resinous or bituminous binder. The encapsulated road surface must be maintained at a minimum frequency of once per year to prevent dust emissions; or

(c) It is encapsulated in asphalt concrete meeting the specifications contained in section 401 of Standard Specifications for Construction of Roads and Bridges on Federal Highway Projects, FP-85, 1985, or their equivalent.

[55 FR 48419, Nov. 20, 1990; 56 FR 1669, Jan. 16, 1991]

**§ 61.144 Standard for manufacturing.**

(a) *Applicability.* This section applies to the following manufacturing operations using commercial asbestos.

(1) The manufacture of cloth, cord, wicks, tubing, tape, twine, rope, thread, yarn, roving, lap, or other textile materials.

(2) The manufacture of cement products.

(3) The manufacture of fireproofing and insulating materials.

(4) The manufacture of friction products.

(5) The manufacture of paper, millboard, and felt.

(6) The manufacture of floor tile.

(7) The manufacture of paints, coatings, caulks, adhesives, and sealants.

(8) The manufacture of plastics and rubber materials.

(9) The manufacture of chlorine utilizing asbestos diaphragm technology.

(10) The manufacture of shotgun shell wads.

(11) The manufacture of asphalt concrete.

(b) *Standard.* Each owner or operator of any of the manufacturing operations to which this section applies shall either:

(1) Discharge no visible emissions to the outside air from these operations

or from any building or structure in which they are conducted or from any other fugitive sources; or

(2) Use the methods specified by § 61.152 to clean emissions from these operations containing particulate asbestos material before they escape to, or are vented to, the outside air.

(3) Monitor each potential source of asbestos emissions from any part of the manufacturing facility, including air cleaning devices, process equipment, and buildings housing material processing and handling equipment, at least once each day during daylight hours for visible emissions to the outside air during periods of operation. The monitoring shall be by visual observation of at least 15 seconds duration per source of emissions.

(4) Inspect each air cleaning device at least once each week for proper operation and for changes that signal the potential for malfunctions, including, to the maximum extent possible without dismantling other than opening the device, the presence of tears, holes, and abrasions in filter bags and for dust deposits on the clean side of bags. For air cleaning devices that cannot be inspected on a weekly basis according to this paragraph, submit to the Administrator, and revise as necessary, a written maintenance plan to include, at a minimum, the following:

(i) Maintenance schedule.

(ii) Recordkeeping plan.

(5) Maintain records of the results of visible emission monitoring and air cleaning device inspections using a format similar to that shown in Figures 1 and 2 and include the following.

(i) Date and time of each inspection.

(ii) Presence or absence of visible emissions.

(iii) Condition of fabric filters, including presence of any tears, holes and abrasions.

(iv) Presence of dust deposits on clean side of fabric filters.

(v) Brief description of corrective actions taken, including date and time.

(vi) Daily hours of operation for each air cleaning device.

(6) Furnish upon request, and make available at the affected facility during normal business hours for inspection by the Administrator, all records required under this section.

(7) Retain a copy of all monitoring and inspection records for at least 2 years.

(8) Submit quarterly a copy of the visible emission monitoring records to the Administrator if visible emissions occurred during the report period. Quarterly reports shall be postmarked by the 30th day following the end of the calendar quarter.

[49 FR 13661, Apr. 5, 1984, as amended at 55 FR 48419, Nov. 20, 1990; 56 FR 1669, Jan. 16, 1991]

**§ 61.145 Standard for demolition and renovation.**

(a) *Applicability.* To determine which requirements of paragraphs (a), (b), and (c) of this section apply to the owner or operator of a demolition or renovation activity and prior to the commencement of the demolition or renovation, thoroughly inspect the affected facility or part of the facility where the demolition or renovation operation will occur for the presence of asbestos, including Category I and Category II nonfriable ACM. The requirements of paragraphs (b) and (c) of this section apply to each owner or operator of a demolition or renovation activity, including the removal of RACM as follows:

(1) In a facility being demolished, all the requirements of paragraphs (b) and (c) of this section apply, except as provided in paragraph (a)(3) of this section, if the combined amount of RACM is

(i) At least 80 linear meters (260 linear feet) on pipes or at least 15 square meters (160 square feet) on other facility components, or

(ii) At least 1 cubic meter (35 cubic feet) off facility components where the length or area could not be measured previously.

(2) In a facility being demolished, only the notification requirements of paragraphs (b)(1), (2), (3)(i) and (iv), and (4)(i) through (vii) and (4)(ix) and (xvi) of this section apply, if the combined amount of RACM is

(i) Less than 80 linear meters (260 linear feet) on pipes and less than 15 square meters (160 square feet) on other facility components, and

(ii) Less than one cubic meter (35 cubic feet) off facility components

where the length or area could not be measured previously or there is no asbestos.

(3) If the facility is being demolished under an order of a State or local government agency, issued because the facility is structurally unsound and in danger of imminent collapse, only the requirements of paragraphs (b)(1), (b)(2), (b)(3)(iii), (b)(4) (except (b)(4)(viii)), (b)(5), and (c)(4) through (c)(9) of this section apply.

(4) In a facility being renovated, including any individual nonscheduled renovation operation, all the requirements of paragraphs (b) and (c) of this section apply if the combined amount of RACM to be stripped, removed, dislodged, cut, drilled, or similarly disturbed is

(i) At least 80 linear meters (260 linear feet) on pipes or at least 15 square meters (160 square feet) on other facility components, or

(ii) At least 1 cubic meter (35 cubic feet) off facility components where the length or area could not be measured previously.

(iii) To determine whether paragraph (a)(4) of this section applies to planned renovation operations involving individual nonscheduled operations, predict the combined additive amount of RACM to be removed or stripped during a calendar year of January 1 through December 31.

(iv) To determine whether paragraph (a)(4) of this section applies to emergency renovation operations, estimate the combined amount of RACM to be removed or stripped as a result of the sudden, unexpected event that necessitated the renovation.

(5) Owners or operators of demolition and renovation operations are exempt from the requirements of §§ 61.05(a), 61.07, and 61.09.

(b) *Notification requirements.* Each owner or operator of a demolition or renovation activity to which this section applies shall:

(1) Provide the Administrator with written notice of intention to demolish or renovate. Delivery of the notice by U.S. Postal Service, commercial delivery service, or hand delivery is acceptable.

(2) Update notice, as necessary, including when the amount of asbestos affected changes by at least 20 percent.

(3) Postmark or deliver the notice as follows:

(i) At least 10 working days before asbestos stripping or removal work or any other activity begins (such as site preparation that would break up, dislodge or similarly disturb asbestos material), if the operation is described in paragraphs (a) (1) and (4) (except (a)(4)(iii) and (a)(4)(iv)) of this section. If the operation is as described in paragraph (a)(2) of this section, notification is required 10 working days before demolition begins.

(ii) At least 10 working days before the end of the calendar year preceding the year for which notice is being given for renovations described in paragraph (a)(4)(iii) of this section.

(iii) As early as possible before, but not later than, the following working day if the operation is a demolition ordered according to paragraph (a)(3) of this section or, if the operation is a renovation described in paragraph (a)(4)(iv) of this section.

(iv) For asbestos stripping or removal work in a demolition or renovation operation, described in paragraphs (a) (1) and (4) (except (a)(4)(iii) and (a)(4)(iv)) of this section, and for a demolition described in paragraph (a)(2) of this section, that will begin on a date other than the one contained in the original notice, notice of the new start date must be provided to the Administrator as follows:

(A) When the asbestos stripping or removal operation or demolition operation covered by this paragraph will begin after the date contained in the notice,

(1) Notify the Administrator of the new start date by telephone as soon as possible before the original start date, and

(2) Provide the Administrator with a written notice of the new start date as soon as possible before, and no later than, the original start date. Delivery of the updated notice by the U.S. Postal Service, commercial delivery service, or hand delivery is acceptable.

(B) When the asbestos stripping or removal operation or demolition operation covered by this paragraph will

begin on a date earlier than the original start date,

(1) Provide the Administrator with a written notice of the new start date at least 10 working days before asbestos stripping or removal work begins.

(2) For demolitions covered by paragraph (a)(2) of this section, provide the Administrator written notice of a new start date at least 10 working days before commencement of demolition. Delivery of updated notice by U.S. Postal Service, commercial delivery service, or hand delivery is acceptable.

(C) In no event shall an operation covered by this paragraph begin on a date other than the date contained in the written notice of the new start date.

(4) Include the following in the notice:

(i) An indication of whether the notice is the original or a revised notification.

(ii) Name, address, and telephone number of both the facility owner and operator and the asbestos removal contractor owner or operator.

(iii) Type of operation: demolition or renovation.

(iv) Description of the facility or affected part of the facility including the size (square meters [square feet] and number of floors), age, and present and prior use of the facility.

(v) Procedure, including analytical methods, employed to detect the presence of RACM and Category I and Category II nonfriable ACM.

(vi) Estimate of the approximate amount of RACM to be removed from the facility in terms of length of pipe in linear meters (linear feet), surface area in square meters (square feet) on other facility components, or volume in cubic meters (cubic feet) if off the facility components. Also, estimate the approximate amount of Category I and Category II nonfriable ACM in the affected part of the facility that will not be removed before demolition.

(vii) Location and street address (including building number or name and floor or room number, if appropriate), city, county, and state, of the facility being demolished or renovated.

(viii) Scheduled starting and completion dates of asbestos removal work (or

any other activity, such as site preparation that would break up, dislodge, or similarly disturb asbestos material) in a demolition or renovation; planned renovation operations involving individual nonscheduled operations shall only include the beginning and ending dates of the report period as described in paragraph (a)(4)(iii) of this section.

(ix) Scheduled starting and completion dates of demolition or renovation.

(x) Description of planned demolition or renovation work to be performed and method(s) to be employed, including demolition or renovation techniques to be used and description of affected facility components.

(xi) Description of work practices and engineering controls to be used to comply with the requirements of this subpart, including asbestos removal and waste-handling emission control procedures.

(xii) Name and location of the waste disposal site where the asbestos-containing waste material will be deposited.

(xiii) A certification that at least one person trained as required by paragraph (c)(8) of this section will supervise the stripping and removal described by this notification. This requirement shall become effective 1 year after promulgation of this regulation.

(xiv) For facilities described in paragraph (a)(3) of this section, the name, title, and authority of the State or local government representative who has ordered the demolition, the date that the order was issued, and the date on which the demolition was ordered to begin. A copy of the order shall be attached to the notification.

(xv) For emergency renovations described in paragraph (a)(4)(iv) of this section, the date and hour that the emergency occurred, a description of the sudden, unexpected event, and an explanation of how the event caused an unsafe condition, or would cause equipment damage or an unreasonable financial burden.

(xvi) Description of procedures to be followed in the event that unexpected RACM is found or Category II nonfriable ACM becomes crumbled, pulverized, or reduced to powder.

(xvii) Name, address, and telephone number of the waste transporter.

(5) The information required in paragraph (b)(4) of this section must be reported using a form similar to that shown in Figure 3.

(c) *Procedures for asbestos emission control.* Each owner or operator of a demolition or renovation activity to whom this paragraph applies, according to paragraph (a) of this section, shall comply with the following procedures:

(1) Remove all RACM from a facility being demolished or renovated before any activity begins that would break up, dislodge, or similarly disturb the material or preclude access to the material for subsequent removal. RACM need not be removed before demolition if:

(i) It is Category I nonfriable ACM that is not in poor condition and is not friable.

(ii) It is on a facility component that is encased in concrete or other similarly hard material and is adequately wet whenever exposed during demolition; or

(iii) It was not accessible for testing and was, therefore, not discovered until after demolition began and, as a result of the demolition, the material cannot be safely removed. If not removed for safety reasons, the exposed RACM and any asbestos-contaminated debris must be treated as asbestos-containing waste material and adequately wet at all times until disposed of.

(iv) They are Category II nonfriable ACM and the probability is low that the materials will become crumbled, pulverized, or reduced to powder during demolition.

(2) When a facility component that contains, is covered with, or is coated with RACM is being taken out of the facility as a unit or in sections:

(i) Adequately wet all RACM exposed during cutting or disjoining operations; and

(ii) Carefully lower each unit or section to the floor and to ground level, not dropping, throwing, sliding, or otherwise damaging or disturbing the RACM.

(3) When RACM is stripped from a facility component while it remains in place in the facility, adequately wet

the RACM during the stripping operation.

(i) In renovation operations, wetting is not required if:

(A) The owner or operator has obtained prior written approval from the Administrator based on a written application that wetting to comply with this paragraph would unavoidably damage equipment or present a safety hazard; and

(B) The owner or operator uses of the following emission control methods:

(1) A local exhaust ventilation and collection system designed and operated to capture the particulate asbestos material produced by the stripping and removal of the asbestos materials. The system must exhibit no visible emissions to the outside air or be designed and operated in accordance with the requirements in §61.152.

(2) A glove-bag system designed and operated to contain the particulate asbestos material produced by the stripping of the asbestos materials.

(3) Leak-tight wrapping to contain all RACM prior to dismantlement.

(ii) In renovation operations where wetting would result in equipment damage or a safety hazard, and the methods allowed in paragraph (c)(3)(i) of this section cannot be used, another method may be used after obtaining written approval from the Administrator based upon a determination that it is equivalent to wetting in controlling emissions or to the methods allowed in paragraph (c)(3)(i) of this section.

(iii) A copy of the Administrator's written approval shall be kept at the worksite and made available for inspection.

(4) After a facility component covered with, coated with, or containing RACM has been taken out of the facility as a unit or in sections pursuant to paragraph (c)(2) of this section, it shall be stripped or contained in leak-tight wrapping, except as described in paragraph (c)(5) of this section. If stripped, either:

(i) Adequately wet the RACM during stripping; or

(ii) Use a local exhaust ventilation and collection system designed and operated to capture the particulate asbestos material produced by the stripping.

The system must exhibit no visible emissions to the outside air or be designed and operated in accordance with the requirements in §61.152.

(5) For large facility components such as reactor vessels, large tanks, and steam generators, but not beams (which must be handled in accordance with paragraphs (c)(2), (3), and (4) of this section), the RACM is not required to be stripped if the following requirements are met:

(i) The component is removed, transported, stored, disposed of, or reused without disturbing or damaging the RACM.

(ii) The component is encased in a leak-tight wrapping.

(iii) The leak-tight wrapping is labeled according to §61.149(d)(1)(i), (ii), and (iii) during all loading and unloading operations and during storage.

(6) For all RACM, including material that has been removed or stripped:

(i) Adequately wet the material and ensure that it remains wet until collected and contained or treated in preparation for disposal in accordance with §61.150; and

(ii) Carefully lower the material to the ground and floor, not dropping, throwing, sliding, or otherwise damaging or disturbing the material.

(iii) Transport the material to the ground via leak-tight chutes or containers if it has been removed or stripped more than 50 feet above ground level and was not removed as units or in sections.

(iv) RACM contained in leak-tight wrapping that has been removed in accordance with paragraphs (c)(4) and (c)(3)(i)(B)(3) of this section need not be wetted.

(7) When the temperature at the point of wetting is below 0 °C (32 °F):

(i) The owner or operator need not comply with paragraph (c)(2)(i) and the wetting provisions of paragraph (c)(3) of this section.

(ii) The owner or operator shall remove facility components containing, coated with, or covered with RACM as units or in sections to the maximum extent possible.

(iii) During periods when wetting operations are suspended due to freezing temperatures, the owner or operator must record the temperature in the

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area containing the facility components at the beginning, middle, and end of each workday and keep daily temperature records available for inspection by the Administrator during normal business hours at the demolition or renovation site. The owner or operator shall retain the temperature records for at least 2 years.

(8) Effective 1 year after promulgation of this regulation, no RACM shall be stripped, removed, or otherwise handled or disturbed at a facility regulated by this section unless at least one on-site representative, such as a foreman or management-level person or other authorized representative, trained in the provisions of this regulation and the means of complying with them, is present. Every 2 years, the trained on-site individual shall receive refresher training in the provisions of this regulation. The required training shall include as a minimum: applicability; no-

tifications; material identification; control procedures for removals including, at least, wetting, local exhaust ventilation, negative pressure enclosures, glove-bag procedures, and High Efficiency Particulate Air (HEPA) filters; waste disposal work practices; reporting and recordkeeping; and asbestos hazards and worker protection. Evidence that the required training has been completed shall be posted and made available for inspection by the Administrator at the demolition or renovation site.

(9) For facilities described in paragraph (a)(3) of this section, adequately wet the portion of the facility that contains RACM during the wrecking operation.

(10) If a facility is demolished by intentional burning, all RACM including Category I and Category II nonfriable ACM must be removed in accordance with the NESHAP before burning.

NOTIFICATION OF DEMOLITION AND RENOVATION

|   |                    |  |                |                                    |
|---|--------------------|--|----------------|------------------------------------|
| Operator Project #  | Postmark           | Date Received                                  | Notification # |                                    |
| I. TYPE OF NOTIFICATION ( O=Original R=Revised C=Cancelled ):   |                    |  |                |                                    |
| II. FACILITY INFORMATION ( Identify owner, removal contractor, and other operator )                           |                    |  |                |                                    |
| OWNER NAME:   |                    |  |                |                                    |
| Address:  |                    |  |                |                                    |
| City:   | State:             | Zip:   |                |                                    |
| Contact:  | Tel:               |  |                |                                    |
| REMOVAL CONTRACTOR:   |                    |  |                |                                    |
| Address:  |                    |  |                |                                    |
| City:   | State:             | Zip:   |                |                                    |
| Contact:  | Tel:               |  |                |                                    |
| OTHER OPERATOR:   |                    |  |                |                                    |
| Address:  |                    |  |                |                                    |
| City:   | State:             | Zip:   |                |                                    |
| Contact:  | Tel:               |  |                |                                    |
| III. TYPE OF OPERATION ( D=Demo O=Ordered Demo R=Renovation E=Emer.Renovation ):                              |                    |  |                |                                    |
| IV. IS ASBESTOS PRESENT? ( Yes/No )   |                    |  |                |                                    |
| V. FACILITY DESCRIPTION ( Include building name, number and floor or room number )                            |                    |  |                |                                    |
| Bldg Name:  |                    |  |                |                                    |
| Address:  |                    |  |                |                                    |
| City:   | State:             | County:  |                |                                    |
| Site Location:  |                    |  |                |                                    |
| Building Size:  | # of Floors:       | Age in Years:                                  |                |                                    |
| Present Use:  | Prior Use:         |  |                |                                    |
| VI. PROCEDURE, INCLUDING ANALYTICAL METHOD, IF APPROPRIATE, USED TO DETECT THE PRESENCE OF ASBESTOS MATERIAL: |                    |  |                |                                    |
| VII. APPROXIMATE AMOUNT OF ASBESTOS, INCLUDING:   |                    |  |                |                                    |
| 1. Regulated ACM to be removed  | RACH To Be Removed | Nonfriable Asbestos Material Not To Be Removed |                | Indicate Unit of Measurement Below |
| 2. Category I ACM Not Removed   |                    | Cat I  | Cat II         | UNIT                               |
| 3. Category II ACM Not Removed  |                    |  |                |                                    |
| Pipes   |                    |  |                | Ln Ft: Ln m:                       |
| Surface Area  |                    |  |                | Sq Ft: Sq m:                       |
| Vol RACH Off Facility Component   |                    |  |                | Cu Ft: Cu m:                       |
| VIII. SCHEDULED DATES ASBESTOS REMOVAL (MM/DD/YY) Start: Complete:  |                    |  |                |                                    |
| IX. SCHEDULED DATES DEMO/RENOVATION (MM/DD/YY) Start: Complete:   |                    |  |                |                                    |

Continued on page two

Figure 3. Notification of Demolition and Renovation

NOTIFICATION OF DEMOLITION AND RENOVATION (continued)

|   |                                   |        |
|---|-----------------------------------|--------|
| X. DESCRIPTION OF PLANNED DEMOLITION OR RENOVATION WORK, AND METHOD(S) TO BE USED:  |                                   |        |
| XI. DESCRIPTION OF WORK PRACTICES AND ENGINEERING CONTROLS TO BE USED TO PREVENT EMISSIONS OF ASBESTOS AT THE DEMOLITION AND RENOVATION SITE:   |                                   |        |
| XII. WASTE TRANSPORTER #1   |                                   |        |
| Name:   |                                   |        |
| Address:  |                                   |        |
| City:   | State:                            | Zip:   |
| Contact Person:   | Telephone:                        |        |
| WASTE TRANSPORTER #2  |                                   |        |
| Name:   |                                   |        |
| Address:  |                                   |        |
| City:   | State:                            | Zip:   |
| Contact Person:   | Telephone:                        |        |
| XIII. WASTE DISPOSAL SITE   |                                   |        |
| Name:   |                                   |        |
| Location:   |                                   |        |
| City:   | State:                            | Zip:   |
| Telephone:  |                                   |        |
| XIV. IF DEMOLITION ORDERED BY A GOVERNMENT AGENCY, PLEASE IDENTIFY THE AGENCY BELOW:  |                                   |        |
| Name:   | Title:                            |        |
| Authority:  |                                   |        |
| Date of Order (MM/DD/YY):   | Date Ordered to Begin (MM/DD/YY): |        |
| XV. FOR EMERGENCY RENOVATIONS   |                                   |        |
| Date and Hour of Emergency (MM/DD/YY):  |                                   |        |
| Description of the Sudden, Unexpected Event:  |                                   |        |
| Explanation of how the event caused unsafe conditions or would cause equipment damage or an unreasonable financial burden:  |                                   |        |
| XVI. DESCRIPTION OF PROCEDURES TO BE FOLLOWED IN THE EVENT THAT UNEXPECTED ASBESTOS IS FOUND OR PREVIOUSLY NONFRIABLE ASBESTOS MATERIAL BECOMES CRUMBLED, PULVERIZED, OR REDUCED TO POWDER.   |                                   |        |
| XVI. I CERTIFY THAT AN INDIVIDUAL TRAINED IN THE PROVISIONS OF THIS REGULATION (40 CFR PART 61, SUBPART M) WILL BE ON-SITE DURING THE DEMOLITION OR RENOVATION AND EVIDENCE THAT THE REQUIRED TRAINING HAS BEEN ACCOMPLISHED BY THIS PERSON WILL BE AVAILABLE FOR INSPECTION DURING NORMAL BUSINESS HOURS. (Required 1 year after promulgation) |                                   |        |
| (Signature of Owner/Operator)   |                                   | (Date) |
| XVII. I CERTIFY THAT THE ABOVE INFORMATION IS CORRECT.  |                                   |        |
| (Signature of Owner/Operator)   |                                   | (Date) |

Figure 3. Notification of Demolition and Renovation

[56 FR 48419, Nov. 20, 1990; 56 FR 1669, Jan. 16, 1991]

**§ 61.146 Standard for spraying.**

The owner or operator of an operation in which asbestos-containing materials are spray applied shall comply with the following requirements:

(a) For spray-on application on buildings, structures, pipes, and conduits, do not use material containing more than 1 percent asbestos as determined using the method specified in appendix E, subpart E, 40 CFR part 763, section 1, Polarized Light Microscopy, except as provided in paragraph (c) of this section.

(b) For spray-on application of materials that contain more than 1 percent asbestos as determined using the method specified in appendix E, subpart E, 40 CFR part 763, section 1, Polarized Light Microscopy, on equipment and machinery, except as provided in paragraph (c) of this section:

(1) Notify the Administrator at least 20 days before beginning the spraying operation. Include the following information in the notice:

(i) Name and address of owner or operator.

(ii) Location of spraying operation.

(iii) Procedures to be followed to meet the requirements of this paragraph.

(2) Discharge no visible emissions to the outside air from spray-on application of the asbestos-containing material or use the methods specified by § 61.152 to clean emissions containing particulate asbestos material before they escape to, or are vented to, the outside air.

(c) The requirements of paragraphs (a) and (b) of this section do not apply to the spray-on application of materials where the asbestos fibers in the materials are encapsulated with a bituminous or resinous binder during spraying and the materials are not friable after drying.

(d) Owners or operators of sources subject to this paragraph are exempt from the requirements of §§ 61.05(a), 61.07 and 61.09.

[49 FR 13661, Apr. 5, 1984. Redesignated and amended at 55 FR 48424, Nov. 20, 1990; 60 FR 31920, June 19, 1995]

**§ 61.147 Standard for fabricating.**

(a) *Applicability.* This section applies to the following fabricating operations using commercial asbestos:

(1) The fabrication of cement building products.

(2) The fabrication of friction products, except those operations that primarily install asbestos friction materials on motor vehicles.

(3) The fabrication of cement or silicate board for ventilation hoods; ovens; electrical panels; laboratory furniture, bulkheads, partitions, and ceilings for marine construction; and flow control devices for the molten metal industry.

(b) *Standard.* Each owner or operator of any of the fabricating operations to which this section applies shall either:

(1) Discharge no visible emissions to the outside air from any of the operations or from any building or structure in which they are conducted or from any other fugitive sources; or

(2) Use the methods specified by § 61.152 to clean emissions containing particulate asbestos material before they escape to, or are vented to, the outside air.

(3) Monitor each potential source of asbestos emissions from any part of the fabricating facility, including air cleaning devices, process equipment, and buildings that house equipment for material processing and handling, at least once each day, during daylight hours, for visible emissions to the outside air during periods of operation. The monitoring shall be by visual observation of at least 15 seconds duration per source of emissions.

(4) Inspect each air cleaning device at least once each week for proper operation and for changes that signal the potential for malfunctions, including, to the maximum extent possible without dismantling other than opening the device, the presence of tears, holes, and abrasions in filter bags and for dust deposits on the clean side of bags. For air cleaning devices that cannot be inspected on a weekly basis according to this paragraph, submit to the Administrator, and revise as necessary, a written maintenance plan to include, at a minimum, the following:

(i) Maintenance schedule.

(ii) Recordkeeping plan.

(5) Maintain records of the results of visible emission monitoring and air cleaning device inspections using a format similar to that shown in Figures 1 and 2 and include the following:

- (i) Date and time of each inspection.
- (ii) Presence or absence of visible emissions.
- (iii) Condition of fabric filters, including presence of any tears, holes, and abrasions.
- (iv) Presence of dust deposits on clean side of fabric filters.
- (v) Brief description of corrective actions taken, including date and time.
- (vi) Daily hours of operation for each air cleaning device.

(6) Furnish upon request and make available at the affected facility during normal business hours for inspection by the Administrator, all records required under this section.

(7) Retain a copy of all monitoring and inspection records for at least 2 years.

(8) Submit quarterly a copy of the visible emission monitoring records to the Administrator if visible emissions occurred during the report period. Quarterly reports shall be postmarked by the 30th day following the end of the calendar quarter.

[49 FR 13661, Apr. 5, 1984. Redesignated and amended at 55 FR 48424, Nov. 20, 1991]

**§61.148 Standard for insulating materials.**

No owner or operator of a facility may install or reinstall on a facility component any insulating materials that contain commercial asbestos if the materials are either molded and friable or wet-applied and friable after drying. The provisions of this section do not apply to spray-applied insulating materials regulated under § 61.146.

[55 FR 48424, Nov. 20, 1990]

**§61.149 Standard for waste disposal for asbestos mills.**

Each owner or operator of any source covered under the provisions of § 61.142 shall:

- (a) Deposit all asbestos-containing waste material at a waste disposal site operated in accordance with the provisions of § 61.154; and
- (b) Discharge no visible emissions to the outside air from the transfer of

control device asbestos waste to the tailings conveyor, or use the methods specified by § 61.152 to clean emissions containing particulate asbestos material before they escape to, or are vented to, the outside air. Dispose of the asbestos waste from control devices in accordance with § 61.150(a) or paragraph (c) of this section; and

(c) Discharge no visible emissions to the outside air during the collection, processing, packaging, or on-site transporting of any asbestos-containing waste material, or use one of the disposal methods specified in paragraphs (c) (1) or (2) of this section, as follows:

(1) Use a wetting agent as follows:

(i) Adequately mix all asbestos-containing waste material with a wetting agent recommended by the manufacturer of the agent to effectively wet dust and tailings, before depositing the material at a waste disposal site. Use the agent as recommended for the particular dust by the manufacturer of the agent.

(ii) Discharge no visible emissions to the outside air from the wetting operation or use the methods specified by § 61.152 to clean emissions containing particulate asbestos material before they escape to, or are vented to, the outside air.

(iii) Wetting may be suspended when the ambient temperature at the waste disposal site is less than  $-9.5^{\circ}\text{C}$  ( $15^{\circ}\text{F}$ ), as determined by an appropriate measurement method with an accuracy of  $\pm 1^{\circ}\text{C}$  ( $\pm 2^{\circ}\text{F}$ ). During periods when wetting operations are suspended, the temperature must be recorded at least at hourly intervals, and records must be retained for at least 2 years in a form suitable for inspection.

(2) Use an alternative emission control and waste treatment method that has received prior written approval by the Administrator. To obtain approval for an alternative method, a written application must be submitted to the Administrator demonstrating that the following criteria are met:

- (i) The alternative method will control asbestos emissions equivalent to currently required methods.
- (ii) The suitability of the alternative method for the intended application.
- (iii) The alternative method will not violate other regulations.

(iv) The alternative method will not result in increased water pollution, land pollution, or occupational hazards.

(d) When waste is transported by vehicle to a disposal site:

(1) Mark vehicles used to transport asbestos-containing waste material during the loading and unloading of the waste so that the signs are visible. The markings must:

(i) Be displayed in such a manner and location that a person can easily read the legend.

(ii) Conform to the requirements for 51 cm × 36 cm (20 in × 14 in) upright format signs specified in 29 CFR 1910.145(d)(4) and this paragraph; and

(iii) Display the following legend in the lower panel with letter sizes and styles of a visibility at least equal to those specified in this paragraph.

Legend  
DANGER  
ASBESTOS DUST HAZARD  
CANCER AND LUNG DISEASE HAZARD  
Authorized Personnel Only  
Notation  
2.5 cm (1 inch) Sans Serif, Gothic or Block  
2.5 cm (1 inch) Sans Serif, Gothic or Block  
1.9 cm (¾ inch) Sans Serif, Gothic or Block  
14 Point Gothic

Spacing between any two lines must be at least equal to the height of the upper of the two lines.

(2) For off-site disposal, provide a copy of the waste shipment record, described in paragraph (e)(1) of this section, to the disposal site owner or operator at the same time as the asbestos-containing waste material is delivered to the disposal site.

(e) For all asbestos-containing waste material transported off the facility site:

(1) Maintain asbestos waste shipment records, using a form similar to that shown in Figure 4, and include the following information:

(i) The name, address, and telephone number of the waste generator.

(ii) The name and address of the local, State, or EPA Regional agency responsible for administering the asbestos NESHAP program.

(iii) The quantity of the asbestos-containing waste material in cubic meters (cubic yards).

(iv) The name and telephone number of the disposal site operator.

(v) The name and physical site location of the disposal site.

(vi) The date transported.

(vii) The name, address, and telephone number of the transporter(s).

(viii) A certification that the contents of this consignment are fully and accurately described by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and government regulations.

(2) For waste shipments where a copy of the waste shipment record, signed by the owner or operator of the designated disposal site, is not received by the waste generator within 35 days of the date the waste was accepted by the initial transporter, contact the transporter and/or the owner or operator of the designated disposal site to determine the status of the waste shipment.

(3) Report in writing to the local, State, or EPA Regional office responsible for administering the asbestos NESHAP program for the waste generator if a copy of the waste shipment record, signed by the owner or operator of the designated waste disposal site, is not received by the waste generator within 45 days of the date the waste was accepted by the initial transporter. Include in the report the following information:

(i) A copy of the waste shipment record for which a confirmation of delivery was not received, and

(ii) A cover letter signed by the waste generator explaining the efforts taken to locate the asbestos waste shipment and the results of those efforts.

(4) Retain a copy of all waste shipment records, including a copy of the waste shipment record signed by the owner or operator of the designated waste disposal site, for at least 2 years.

(f) Furnish upon request, and make available for inspection by the Administrator, all records required under this section.

|  |  |           |                        |   |
|--|--|-----------|------------------------|---|
| Generator  | 1. Work site name and mailing address  |           | Owner's name           | Owner's telephone no.                               |
|  | 2. Operator's name and address   |           |                        | Operator's telephone no.                            |
|  | 3. Waste disposal site (WDS) name, mailing address, and physical site location   |           |                        | WDS phone no.                                       |
|  | 4. Name, and address of responsible agency   |           |                        |   |
|  | 5. Description of materials  |           | 6. Containers No. Type | 7. Total quantity m <sup>3</sup> (yd <sup>3</sup> ) |
|  | 8. Special handling instructions and additional information  |           |                        |   |
|  | 9. OPERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and government regulations. |           |                        |   |
|  | Printed/typed name & title   |           | Signature              | Month Day Year                                      |
|  | 10. Transporter 1 (Acknowledgment of receipt of materials)   |           |                        |   |
| Printed/typed name & title                                 |  | Signature | Month Day Year         |   |
| Address and telephone no.                                  |  |           |                        |   |
| 11. Transporter 2 (Acknowledgment of receipt of materials) |  |           |                        |   |
| Printed/typed name & title                                 |  | Signature | Month Day Year         |   |
| Address and telephone no.                                  |  |           |                        |   |
| Disposal Site  | 12. Discrepancy indication space   |           |                        |   |
|  | 13. Waste disposal site owner or operator: Certification of receipt of asbestos materials covered by this manifest except as noted in item 12.   |           |                        |   |
| Printed/typed name & title                                 |  | Signature | Month Day Year         |   |

(Continued)

Figure 4. Waste Shipment Record

| INSTRUCTIONS   |   |
|--|---|
| <u>Waste Generator Section</u> (Items 1-9)                 |   |
| 1.   | Enter the name of the facility at which asbestos waste is generated and the address where the facility is located. In the appropriate spaces, also enter the name of the owner of the facility and the owner's phone number.  |
| 2.   | If a demolition or renovation, enter the name and address of the company and authorized agent responsible for performing the asbestos removal. In the appropriate spaces, also enter the phone number of the operator.  |
| 3.   | Enter the name, address, and physical site location of the waste disposal site (WDS) that will be receiving the asbestos materials. In the appropriate spaces, also enter the phone number of the WDS. Enter "on-site" if the waste will be disposed of on the generator's property.  |
| 4.   | Provide the name and address of the local, State, or EPA Regional office responsible for administering the asbestos NESHAP program.   |
| 5.   | Indicate the types of asbestos waste materials generated. If from a demolition or renovation, indicate the amount of asbestos that is <ul style="list-style-type: none"> <li>- Friable asbestos material</li> <li>- Nonfriable asbestos material</li> </ul>   |
| 6.   | Enter the number of containers used to transport the asbestos materials listed in item 5. Also enter one of the following container codes used in transporting each type of asbestos material (specify any other type of container used if not listed below): <ul style="list-style-type: none"> <li>DM - Metal drums, barrels</li> <li>DP - Plastic drums, barrels</li> <li>BA - 6 mil plastic bags or wrapping</li> </ul> |
| 7.   | Enter the quantities of each type of asbestos material removed in units of cubic meters (cubic yards).  |
| 8.   | Use this space to indicate special transportation, treatment, storage or disposal or Bill of Lading information. If an alternate waste disposal site is designated, note it here. Emergency response telephone numbers or similar information may be included here.   |
| 9.   | The authorized agent of the waste generator must read and then sign and date this certification. The date is the date of receipt by transporter.  |
| NOTE: The waste generator must retain a copy of this form. |   |

(continued)

Figure 4. Waste Shipment Record

|   |
|---|
| <p><b><u>Transporter Section (Items 10 &amp; 11)</u></b></p> <p>10. &amp; 11. Enter name, address, and telephone number of each transporter used, if applicable. Print or type the full name and title of person accepting responsibility and acknowledging receipt of materials as listed on this waste shipment record for transport. Enter date of receipt and signature.</p> <p>NOTE: The transporter must retain a copy of this form.</p> <p><b><u>Disposal Site Section (Items 12 &amp; 13)</u></b></p> <p>12. The authorized representative of the WDS must note in this space any discrepancy between waste described on this manifest and waste actually received as well as any improperly enclosed or contained waste. Any rejected materials should be listed and destination of those materials provided. A site that converts asbestos-containing waste material to nonasbestos material is considered a WDS.</p> <p>13. The signature (by hand) of the authorized WDS agent indicates acceptance and agreement with statements on this manifest except as noted in item 12. The date is the date of signature and receipt of shipment.</p> <p>NOTE: The WDS must retain a completed copy of this form. The WDS must also send a completed copy to the operator listed in item 2.</p> |
|---|

Figure 4. Waste Shipment Record

[49 FR 13661, Apr. 5, 1984. Redesignated and amended at 55 FR 48424, Nov. 20, 1990; 56 FR 1669, Jan. 16, 1991]

**§61.150 Standard for waste disposal for manufacturing, fabricating, demolition, renovation, and spraying operations.**

Each owner or operator of any source covered under the provisions of §§ 61.144, 61.145, 61.146, and 61.147 shall comply with the following provisions:

(a) Discharge no visible emissions to the outside air during the collection, processing (including incineration), packaging, or transporting of any asbestos-containing waste material generated by the source, or use one of the emission control and waste treatment methods specified in paragraphs (a) (1) through (4) of this section.

(1) Adequately wet asbestos-containing waste material as follows:

(i) Mix control device asbestos waste to form a slurry; adequately wet other asbestos-containing waste material; and

(ii) Discharge no visible emissions to the outside air from collection, mixing, wetting, and handling operations, or use the methods specified by § 61.152 to clean emissions containing particulate asbestos material before they escape to, or are vented to, the outside air; and

(iii) After wetting, seal all asbestos-containing waste material in leak-tight containers while wet; or, for materials that will not fit into containers without additional breaking, put materials into leak-tight wrapping; and

(iv) Label the containers or wrapped materials specified in paragraph (a)(1)(iii) of this section using warning labels specified by Occupational Safety and Health Standards of the Department of Labor, Occupational Safety and Health Administration (OSHA) under 29 CFR 1910.1001(j)(2) or 1926.58(k)(2)(iii). The labels shall be printed in letters of sufficient size and contrast so as to be readily visible and legible.

(v) For asbestos-containing waste material to be transported off the facility site, label containers or wrapped materials with the name of the waste generator and the location at which the waste was generated.

(2) Process asbestos-containing waste material into nonfriable forms as follows:

(i) Form all asbestos-containing waste material into nonfriable pellets or other shapes;

(ii) Discharge no visible emissions to the outside air from collection and processing operations, including incineration, or use the method specified by § 61.152 to clean emissions containing particulate asbestos material before they escape to, or are vented to, the outside air.

(3) For facilities demolished where the RACM is not removed prior to demolition according to §§ 61.145(c)(1) (i), (ii), (iii), and (iv) or for facilities demolished according to § 61.145(c)(9), adequately wet asbestos-containing waste material at all times after demolition and keep wet during handling and loading for transport to a disposal site. Asbestos-containing waste materials covered by this paragraph do not have to be sealed in leak-tight containers or wrapping but may be transported and disposed of in bulk.

(4) Use an alternative emission control and waste treatment method that has received prior approval by the Administrator according to the procedure described in § 61.149(c)(2).

(5) As applied to demolition and renovation, the requirements of paragraph (a) of this section do not apply to Category I nonfriable ACM waste and Category II nonfriable ACM waste that did not become crumbled, pulverized, or reduced to powder.

(b) All asbestos-containing waste material shall be deposited as soon as is practical by the waste generator at:

(1) A waste disposal site operated in accordance with the provisions of § 61.154, or

(2) An EPA-approved site that converts RACM and asbestos-containing waste material into nonasbestos (asbestos-free) material according to the provisions of § 61.155.

(3) The requirements of paragraph (b) of this section do not apply to Category I nonfriable ACM that is not RACM.

(c) Mark vehicles used to transport asbestos-containing waste material during the loading and unloading of waste so that the signs are visible. The markings must conform to the requirements of §§ 61.149(d)(1) (i), (ii), and (iii).

(d) For all asbestos-containing waste material transported off the facility site:

(1) Maintain waste shipment records, using a form similar to that shown in Figure 4, and include the following information:

(i) The name, address, and telephone number of the waste generator.

(ii) The name and address of the local, State, or EPA Regional office responsible for administering the asbestos NESHAP program.

(iii) The approximate quantity in cubic meters (cubic yards).

(iv) The name and telephone number of the disposal site operator.

(v) The name and physical site location of the disposal site.

(vi) The date transported.

(vii) The name, address, and telephone number of the transporter(s).

(viii) A certification that the contents of this consignment are fully and accurately described by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and government regulations.

(2) Provide a copy of the waste shipment record, described in paragraph (d)(1) of this section, to the disposal site owners or operators at the same time as the asbestos-containing waste material is delivered to the disposal site.

(3) For waste shipments where a copy of the waste shipment record, signed by the owner or operator of the designated disposal site, is not received by the waste generator within 35 days of the date the waste was accepted by the initial transporter, contact the transporter and/or the owner or operator of the designated disposal site to determine the status of the waste shipment.

(4) Report in writing to the local, State, or EPA Regional office responsible for administering the asbestos NESHAP program for the waste generator if a copy of the waste shipment record, signed by the owner or operator of the designated waste disposal site, is not received by the waste generator within 45 days of the date the waste was accepted by the initial transporter.

Include in the report the following information:

(i) A copy of the waste shipment record for which a confirmation of delivery was not received, and

(ii) A cover letter signed by the waste generator explaining the efforts taken to locate the asbestos waste shipment and the results of those efforts.

(5) Retain a copy of all waste shipment records, including a copy of the waste shipment record signed by the owner or operator of the designated waste disposal site, for at least 2 years.

(e) Furnish upon request, and make available for inspection by the Administrator, all records required under this section.

[55 FR 48429, Nov. 20, 1990; 56 FR 1669, Jan. 16, 1991]

**§61.151 Standard for inactive waste disposal sites for asbestos mills and manufacturing and fabricating operations.**

Each owner or operator of any inactive waste disposal site that was operated by sources covered under §61.142, 61.144, or 61.147 and received deposits of asbestos-containing waste material generated by the sources, shall:

(a) Comply with one of the following:

(1) Either discharge no visible emissions to the outside air from an inactive waste disposal site subject to this paragraph; or

(2) Cover the asbestos-containing waste material with at least 15 centimeters (6 inches) of compacted non-asbestos-containing material, and grow and maintain a cover of vegetation on the area adequate to prevent exposure of the asbestos-containing waste material. In desert areas where vegetation would be difficult to maintain, at least 8 additional centimeters (3 inches) of well-graded, nonasbestos crushed rock may be placed on top of the final cover instead of vegetation and maintained to prevent emissions; or

(3) Cover the asbestos-containing waste material with at least 60 centimeters (2 feet) of compacted nonasbestos-containing material, and maintain it to prevent exposure of the asbestos-containing waste; or

(4) For inactive waste disposal sites for asbestos tailings, a resinous or petroleum-based dust suppression agent

that effectively binds dust to control surface air emissions may be used instead of the methods in paragraphs (a) (1), (2), and (3) of this section. Use the agent in the manner and frequency recommended for the particular asbestos tailings by the manufacturer of the dust suppression agent to achieve and maintain dust control. Obtain prior written approval of the Administrator to use other equally effective dust suppression agents. For purposes of this paragraph, any used, spent, or other waste oil is not considered a dust suppression agent.

(b) Unless a natural barrier adequately deters access by the general public, install and maintain warning signs and fencing as follows, or comply with paragraph (a)(2) or (a)(3) of this section.

(1) Display warning signs at all entrances and at intervals of 100 m (328 ft) or less along the property line of the site or along the perimeter of the sections of the site where asbestos-containing waste material was deposited. The warning signs must:

(i) Be posted in such a manner and location that a person can easily read the legend; and

(ii) Conform to the requirements for 51 cm×36 cm (20"×14") upright format signs specified in 29 CFR 1910.145(d)(4) and this paragraph; and

(iii) Display the following legend in the lower panel with letter sizes and styles of a visibility at least equal to those specified in this paragraph.

| Legend  | Notation                                    |
|---|---|
| Asbestos Waste Disposal Site.                   | 2.5 cm (1 inch) Sans Serif, Gothic or Block |
| Do Not Create Dust .....                        | 1.9 cm (¾ inch) Sans Serif, Gothic or Block |
| Breathing Asbestos is Hazardous to Your Health. | 14 Point Gothic.                            |

Spacing between any two lines must be at least equal to the height of the upper of the two lines.

(2) Fence the perimeter of the site in a manner adequate to deter access by the general public.

(3) When requesting a determination on whether a natural barrier adequately deters public access, supply information enabling the Administrator to determine whether a fence or a nat-

ural barrier adequately deters access by the general public.

(c) The owner or operator may use an alternative control method that has received prior approval of the Administrator rather than comply with the requirements of paragraph (a) or (b) of this section.

(d) Notify the Administrator in writing at least 45 days prior to excavating or otherwise disturbing any asbestos-containing waste material that has been deposited at a waste disposal site under this section, and follow the procedures specified in the notification. If the excavation will begin on a date other than the one contained in the original notice, notice of the new start date must be provided to the Administrator at least 10 working days before excavation begins and in no event shall excavation begin earlier than the date specified in the original notification. Include the following information in the notice:

(1) Scheduled starting and completion dates.

(2) Reason for disturbing the waste.

(3) Procedures to be used to control emissions during the excavation, storage, transport, and ultimate disposal of the excavated asbestos-containing waste material. If deemed necessary, the Administrator may require changes in the emission control procedures to be used.

(4) Location of any temporary storage site and the final disposal site.

(e) Within 60 days of a site becoming inactive and after the effective date of this subpart, record, in accordance with State law, a notation on the deed to the facility property and on any other instrument that would normally be examined during a title search; this notation will in perpetuity notify any potential purchaser of the property that:

(1) The land has been used for the disposal of asbestos-containing waste material;

(2) The survey plot and record of the location and quantity of asbestos-containing waste disposed of within the disposal site required in §61.154(f) have been filed with the Administrator; and

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(3) The site is subject to 40 CFR part 61, subpart M.

[49 FR 13661, Apr. 5, 1984, as amended at 53 FR 36972, Sept. 23, 1988. Redesignated and amended at 55 FR 48429, Nov. 20, 1990]

### § 61.152 Air-cleaning.

(a) The owner or operator who uses air cleaning, as specified in §§ 61.142(a), 61.144(b)(2), 61.145(c)(3)(i)(B)(I), 61.145(c)(4)(ii), 61.145(c)(11)(i), 61.146(b)(2), 61.147(b)(2), 61.149(b), 61.149(c)(1)(ii), 61.150(a)(1)(ii), 61.150(a)(2)(ii), and 61.155(e) shall:

(1) Use fabric filter collection devices, except as noted in paragraph (b) of this section, doing all of the following:

(i) Ensuring that the airflow permeability, as determined by ASTM Method D737-75, does not exceed 9 m<sup>3</sup>/min/m<sup>2</sup> (30 ft<sup>3</sup>/min/ft<sup>2</sup>) for woven fabrics or 11<sup>3</sup>/min/m<sup>2</sup> (35 ft<sup>3</sup>/min/ft<sup>2</sup>) for felted fabrics, except that 12 m<sup>3</sup>/min/m<sup>2</sup> (40 ft<sup>3</sup>/min/ft<sup>2</sup>) for woven and 14 m<sup>3</sup>/min/m<sup>2</sup> (45 ft<sup>3</sup>/min/ft<sup>2</sup>) for felted fabrics is allowed for filtering air from asbestos ore dryers; and

(ii) Ensuring that felted fabric weighs at least 475 grams per square meter (14 ounces per square yard) and is at least 1.6 millimeters (one-sixteenth inch) thick throughout; and

(iii) Avoiding the use of synthetic fabrics that contain fill yarn other than that which is spun.

(2) Properly install, use, operate, and maintain all air-cleaning equipment authorized by this section. Bypass devices may be used only during upset or emergency conditions and then only for so long as it takes to shut down the operation generating the particulate asbestos material.

(3) For fabric filter collection devices installed after January 10, 1989, provide for easy inspection for faulty bags.

(b) There are the following exceptions to paragraph (a)(1):

(1) After January 10, 1989, if the use of fabric creates a fire or explosion hazard, or the Administrator determines that a fabric filter is not feasible, the Administrator may authorize as a substitute the use of wet collectors designed to operate with a unit contacting energy of at least 9.95 kilopascals (40 inches water gage pressure).

(2) Use a HEPA filter that is certified to be at least 99.97 percent efficient for 0.3 micron particles.

(3) The Administrator may authorize the use of filtering equipment other than described in paragraphs (a)(1) and (b)(1) and (2) of this section if the owner or operator demonstrates to the Administrator's satisfaction that it is equivalent to the described equipment in filtering particulate asbestos material.

[49 FR 13661, Apr. 5, 1984; 49 FR 25453, June 21, 1984, as amended at 51 FR 8199, Mar. 10, 1986. Redesignated and amended at 55 FR 48430, Nov. 20, 1990]

### § 61.153 Reporting.

(a) Any new source to which this subpart applies (with the exception of sources subject to §§ 61.143, 61.145, 61.146, and 61.148), which has an initial startup date preceding the effective date of this revision, shall provide the following information to the Administrator postmarked or delivered within 90 days of the effective date. In the case of a new source that does not have an initial startup date preceding the effective date, the information shall be provided, postmarked or delivered, within 90 days of the initial startup date. Any owner or operator of an existing source shall provide the following information to the Administrator within 90 days of the effective date of this subpart unless the owner or operator of the existing source has previously provided this information to the Administrator. Any changes in the information provided by any existing source shall be provided to the Administrator, postmarked or delivered, within 30 days after the change.

(1) A description of the emission control equipment used for each process; and

(i) If the fabric device uses a woven fabric, the airflow permeability in m<sup>3</sup>/min/m<sup>2</sup> and; if the fabric is synthetic, whether the fill yarn is spun or not spun; and

(ii) If the fabric filter device uses a felted fabric, the density in g/m<sup>2</sup>, the minimum thickness in inches, and the airflow permeability in m<sup>3</sup>/min/m<sup>2</sup>.

(2) If a fabric filter device is used to control emissions,

(i) The airflow permeability in  $m^3/\text{min}/m^2$  ( $\text{ft}^3/\text{min}/\text{ft}^2$ ) if the fabric filter device uses a woven fabric, and, if the fabric is synthetic, whether the fill yarn is spun or not spun; and

(ii) If the fabric filter device uses a felted fabric, the density in  $g/m^2$  ( $\text{oz}/\text{yd}^2$ ), the minimum thickness in millimeters (inches), and the airflow permeability in  $m^3/\text{min}/m^2$  ( $\text{ft}^3/\text{min}/\text{ft}^2$ ).

(3) If a HEPA filter is used to control emissions, the certified efficiency.

(4) For sources subject to §§61.149 and 61.150:

(i) A brief description of each process that generates asbestos-containing waste material; and

(ii) The average volume of asbestos-containing waste material disposed of, measured in  $m^3/\text{day}$  ( $\text{yd}^3/\text{day}$ ); and

(iii) The emission control methods used in all stages of waste disposal; and

(iv) The type of disposal site or incineration site used for ultimate disposal, the name of the site operator, and the name and location of the disposal site.

(5) For sources subject to §§61.151 and 61.154:

(i) A brief description of the site; and

(ii) The method or methods used to comply with the standard, or alternative procedures to be used.

(b) The information required by paragraph (a) of this section must accompany the information required by §61.10. Active waste disposal sites subject to §61.154 shall also comply with this provision. Roadways, demolition and renovation, spraying, and insulating materials are exempted from the requirements of §61.10(a). The information described in this section must be reported using the format of appendix A of this part as a guide.

(Sec. 114, Clean Air Act as amended (42 U.S.C. 7414))

[49 FR 13661, Apr. 5, 1984. Redesignated and amended at 55 FR 48430, Nov. 20, 1990; 56 FR 1669, Jan. 16, 1991]

**§61.154 Standard for active waste disposal sites.**

Each owner or operator of an active waste disposal site that receives asbestos-containing waste material from a source covered under §61.149, 61.150, or 61.155 shall meet the requirements of this section:

(a) Either there must be no visible emissions to the outside air from any active waste disposal site where asbestos-containing waste material has been deposited, or the requirements of paragraph (c) or (d) of this section must be met.

(b) Unless a natural barrier adequately deters access by the general public, either warning signs and fencing must be installed and maintained as follows, or the requirements of paragraph (c)(1) of this section must be met.

(1) Warning signs must be displayed at all entrances and at intervals of 100 m (330 ft) or less along the property line of the site or along the perimeter of the sections of the site where asbestos-containing waste material is deposited. The warning signs must:

(i) Be posted in such a manner and location that a person can easily read the legend; and

(ii) Conform to the requirements of 51 cm  $\times$  36 cm (20"  $\times$  14") upright format signs specified in 29 CFR 1910.145(d)(4) and this paragraph; and

(iii) Display the following legend in the lower panel with letter sizes and styles of a visibility at least equal to those specified in this paragraph.

| Legend  | Notation                                     |
|---|--|
| Asbestos Waste Disposal Site.                   | 2.5 cm (1 inch) Sans Serif, Gothic or Block. |
| Do Not Create Dust .....                        | 1.9 cm (¾ inch) Sans Serif, Gothic or Block. |
| Breathing Asbestos is Hazardous to Your Health. | 14 Point Gothic.                             |

Spacing between any two lines must be at least equal to the height of the upper of the two lines.

(2) The perimeter of the disposal site must be fenced in a manner adequate to deter access by the general public.

(3) Upon request and supply of appropriate information, the Administrator will determine whether a fence or a natural barrier adequately deters access by the general public.

(c) Rather than meet the no visible emission requirement of paragraph (a) of this section, at the end of each operating day, or at least once every 24-

hour period while the site is in continuous operation, the asbestos-containing waste material that has been deposited at the site during the operating day or previous 24-hour period shall:

(1) Be covered with at least 15 centimeters (6 inches) of compacted nonasbestos-containing material, or

(2) Be covered with a resinous or petroleum-based dust suppression agent that effectively binds dust and controls wind erosion. Such an agent shall be used in the manner and frequency recommended for the particular dust by the dust suppression agent manufacturer to achieve and maintain dust control. Other equally effective dust suppression agents may be used upon prior approval by the Administrator. For purposes of this paragraph, any used, spent, or other waste oil is not considered a dust suppression agent.

(d) Rather than meet the no visible emission requirement of paragraph (a) of this section, use an alternative emissions control method that has received prior written approval by the Administrator according to the procedures described in §61.149(c)(2).

(e) For all asbestos-containing waste material received, the owner or operator of the active waste disposal site shall:

(1) Maintain waste shipment records, using a form similar to that shown in Figure 4, and include the following information:

(i) The name, address, and telephone number of the waste generator.

(ii) The name, address, and telephone number of the transporter(s).

(iii) The quantity of the asbestos-containing waste material in cubic meters (cubic yards).

(iv) The presence of improperly enclosed or uncovered waste, or any asbestos-containing waste material not sealed in leak-tight containers. Report in writing to the local, State, or EPA Regional office responsible for administering the asbestos NESHAP program for the waste generator (identified in the waste shipment record), and, if different, the local, State, or EPA Regional office responsible for administering the asbestos NESHAP program for the disposal site, by the following working day, the presence of a significant amount of improperly enclosed or

uncovered waste. Submit a copy of the waste shipment record along with the report.

(v) The date of the receipt.

(2) As soon as possible and no longer than 30 days after receipt of the waste, send a copy of the signed waste shipment record to the waste generator.

(3) Upon discovering a discrepancy between the quantity of waste designated on the waste shipment records and the quantity actually received, attempt to reconcile the discrepancy with the waste generator. If the discrepancy is not resolved within 15 days after receiving the waste, immediately report in writing to the local, State, or EPA Regional office responsible for administering the asbestos NESHAP program for the waste generator (identified in the waste shipment record), and, if different, the local, State, or EPA Regional office responsible for administering the asbestos NESHAP program for the disposal site. Describe the discrepancy and attempts to reconcile it, and submit a copy of the waste shipment record along with the report.

(4) Retain a copy of all records and reports required by this paragraph for at least 2 years.

(f) Maintain, until closure, records of the location, depth and area, and quantity in cubic meters (cubic yards) of asbestos-containing waste material within the disposal site on a map or diagram of the disposal area.

(g) Upon closure, comply with all the provisions of §61.151.

(h) Submit to the Administrator, upon closure of the facility, a copy of records of asbestos waste disposal locations and quantities.

(i) Furnish upon request, and make available during normal business hours for inspection by the Administrator, all records required under this section.

(j) Notify the Administrator in writing at least 45 days prior to excavating or otherwise disturbing any asbestos-containing waste material that has been deposited at a waste disposal site and is covered. If the excavation will begin on a date other than the one contained in the original notice, notice of the new start date must be provided to the Administrator at least 10 working days before excavation begins and in no event shall excavation begin earlier

than the date specified in the original notification. Include the following information in the notice:

- (1) Scheduled starting and completion dates.
- (2) Reason for disturbing the waste.
- (3) Procedures to be used to control emissions during the excavation, storage, transport, and ultimate disposal of the excavated asbestos-containing waste material. If deemed necessary, the Administrator may require changes in the emission control procedures to be used.
- (4) Location of any temporary storage site and the final disposal site.

(Secs. 112 and 301(a) of the Clean Air Act as amended (42 U.S.C. 7412, 7601(a))

[49 FR 13661, Apr. 5, 1990. Redesignated and amended at 55 FR 48431, Nov. 20, 1990; 56 FR 1669, Jan. 16, 1991]

**§ 61.155 Standard for operations that convert asbestos-containing waste material into nonasbestos (asbestos-free) material.**

Each owner or operator of an operation that converts RACM and asbestos-containing waste material into nonasbestos (asbestos-free) material shall:

- (a) Obtain the prior written approval of the Administrator to construct the facility. To obtain approval, the owner or operator shall provide the Administrator with the following information:
  - (1) Application to construct pursuant to § 61.07.
  - (2) In addition to the information requirements of § 61.07(b)(3), a
    - (i) Description of waste feed handling and temporary storage.
    - (ii) Description of process operating conditions.
    - (iii) Description of the handling and temporary storage of the end product.
    - (iv) Description of the protocol to be followed when analyzing output materials by transmission electron microscopy.
  - (3) Performance test protocol, including provisions for obtaining information required under paragraph (b) of this section.
  - (4) The Administrator may require that a demonstration of the process be performed prior to approval of the application to construct.

(b) Conduct a start-up performance test. Test results shall include:

(1) A detailed description of the types and quantities of nonasbestos material, RACM, and asbestos-containing waste material processed, *e.g.*, asbestos cement products, friable asbestos insulation, plaster, wood, plastic, wire, etc. Test feed is to include the full range of materials that will be encountered in actual operation of the process.

(2) Results of analyses, using polarized light microscopy, that document the asbestos content of the wastes processed.

(3) Results of analyses, using transmission electron microscopy, that document that the output materials are free of asbestos. Samples for analysis are to be collected as 8-hour composite samples (one 200-gram (7-ounce) sample per hour), beginning with the initial introduction of RACM or asbestos-containing waste material and continuing until the end of the performance test.

(4) A description of operating parameters, such as temperature and residence time, defining the full range over which the process is expected to operate to produce nonasbestos (asbestos-free) materials. Specify the limits for each operating parameter within which the process will produce nonasbestos (asbestos-free) materials.

(5) The length of the test.

(c) During the initial 90 days of operation,

(1) Continuously monitor and log the operating parameters identified during start-up performance tests that are intended to ensure the production of nonasbestos (asbestos-free) output material.

(2) Monitor input materials to ensure that they are consistent with the test feed materials described during start-up performance tests in paragraph (b)(1) of this section.

(3) Collect and analyze samples, taken as 10-day composite samples (one 200-gram (7-ounce) sample collected every 8 hours of operation) of all output material for the presence of asbestos. Composite samples may be for fewer than 10 days. Transmission electron microscopy (TEM) shall be used to analyze the output material for the presence of asbestos. During the initial 90-day period, all output materials

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must be stored on-site until analysis shows the material to be asbestos-free or disposed of as asbestos-containing waste material according to §61.150.

(d) After the initial 90 days of operation,

(1) Continuously monitor and record the operating parameters identified during start-up performance testing and any subsequent performance testing. Any output produced during a period of deviation from the range of operating conditions established to ensure the production of nonasbestos (asbestos-free) output materials shall be:

(i) Disposed of as asbestos-containing waste material according to §61.150, or

(ii) Recycled as waste feed during process operation within the established range of operating conditions, or

(iii) Stored temporarily on-site in a leak-tight container until analyzed for asbestos content. Any product material that is not asbestos-free shall be either disposed of as asbestos-containing waste material or recycled as waste feed to the process.

(2) Collect and analyze monthly composite samples (one 200-gram (7-ounce) sample collected every 8 hours of operation) of the output material. Transmission electron microscopy shall be used to analyze the output material for the presence of asbestos.

(e) Discharge no visible emissions to the outside air from any part of the operation, or use the methods specified by §61.152 to clean emissions containing particulate asbestos material before they escape to, or are vented to, the outside air.

(f) Maintain records on-site and include the following information:

(1) Results of start-up performance testing and all subsequent performance testing, including operating parameters, feed characteristic, and analyses of output materials.

(2) Results of the composite analyses required during the initial 90 days of operation under §61.155(c).

(3) Results of the monthly composite analyses required under §61.155(d).

(4) Results of continuous monitoring and logs of process operating parameters required under §61.155 (c) and (d).

(5) The information on waste shipments received as required in §61.154(e).

(6) For output materials where no analyses were performed to determine the presence of asbestos, record the name and location of the purchaser or disposal site to which the output materials were sold or deposited, and the date of sale or disposal.

(7) Retain records required by paragraph (f) of this section for at least 2 years.

(g) Submit the following reports to the Administrator:

(1) A report for each analysis of product composite samples performed during the initial 90 days of operation.

(2) A quarterly report, including the following information concerning activities during each consecutive 3-month period:

(i) Results of analyses of monthly product composite samples.

(ii) A description of any deviation from the operating parameters established during performance testing, the duration of the deviation, and steps taken to correct the deviation.

(iii) Disposition of any product produced during a period of deviation, including whether it was recycled, disposed of as asbestos-containing waste material, or stored temporarily on-site until analyzed for asbestos content.

(iv) The information on waste disposal activities as required in §61.154(f).

(h) Nonasbestos (asbestos-free) output material is not subject to any of the provisions of this subpart. Output materials in which asbestos is detected, or output materials produced when the operating parameters deviated from those established during the start-up performance testing, unless shown by TEM analysis to be asbestos-free, shall be considered to be asbestos-containing waste and shall be handled and disposed of according to §§61.150 and 61.154 or reprocessed while all of the established operating parameters are being met.

[55 FR 48431, Nov. 20, 1990]

### **§61.156 Cross-reference to other asbestos regulations.**

In addition to this subpart, the regulations referenced in Table 1 also apply to asbestos and may be applicable to those sources specified in §§61.142 through 61.151, 61.154, and 61.155 of this

subpart. These cross-references are presented for the reader's information and to promote compliance with the cited regulations.

TABLE 1—CROSS-REFERENCE TO OTHER ASBESTOS REGULATIONS

| Agency | CFR citation                     | Comment  |
|--------|----------------------------------|--|
| EPA    | 40 CFR part 763, subpart E ..... | Requires schools to inspect for asbestos and implement response actions and submit asbestos management plans to States. Specifies use of accredited inspectors, air sampling methods, and waste disposal procedures. |
|        | 40 CFR part 427 .....            | Effluent standards for asbestos manufacturing source categories.   |
|        | 40 CFR part 763, subpart G ..... | Protects public employees performing asbestos abatement work in States not covered by OSHA asbestos standard.  |
| OSHA   | 29 CFR 1910.1001 .....           | Worker protection measures—engineering controls, worker training, labeling, respiratory protection, bagging of waste, 0.2 f/cc permissible exposure level.   |
|        | 29 CFR 1926.58 .....             | Worker protection measures for all construction work involving asbestos, including demolition and renovation—work practices, worker training, bagging of waste, 0.2 f/cc permissible exposure level.                 |
| MSHA   | 30 part CFR 56, subpart D .....  | Specifies exposure limits, engineering controls, and respiratory protection measures for workers in surface mines.   |
|        | 30 CFR part 57, subpart D .....  | Specifies exposure limits, engineering controls, and respiratory protection measures for workers in underground mines.   |
| DOT    | 49 CFR parts 171 and 172 .....   | Regulates the transportation of asbestos-containing waste material. Requires waste containment and shipping papers.  |

[55 FR 48432, Nov. 20, 1990, as amended at 60 FR 31920, June 19, 1995]

**§ 61.157 Delegation of authority.**

(a) In delegating implementation and enforcement authority to a State under section 112(d) of the Act, the authorities contained in paragraph (b) of this section shall be retained by the Administrator and not transferred to a State.

(b) Authorities that will not be delegated to States:

- (1) Section 61.149(c)(2)
- (2) Section 61.150(a)(4)
- (3) Section 61.151(c)
- (4) Section 61.152(b)(3)
- (5) Section 61.154(d)
- (6) Section 61.155(a).

[55 FR 48433, Nov. 20, 1990]

APPENDIX A TO SUBPART M—INTERPRETIVE RULE GOVERNING ROOF REMOVAL OPERATIONS

*I. Applicability of the Asbestos NESHAP*

1.1. Asbestos-containing material (ACM) is material containing more than one percent asbestos as determined using the methods specified in appendix E, subpart E, 40 CFR part 763, section 1, Polarized Light Microscopy. The NESHAP classifies ACM as either "friable" or "nonfriable". Friable ACM is ACM that, when dry, can be crumbled, pulverized or reduced to powder by hand pressure. Nonfriable ACM is ACM that, when dry, cannot be crumbled, pulverized or reduced to powder by hand pressure.

1.2. Nonfriable ACM is further classified as either Category I ACM or Category II ACM. Category I ACM and Category II ACM are distinguished from each other by their potential to release fibers when damaged. Category I ACM includes asbestos-containing gaskets, packings, resilient floor coverings, resilient floor covering mastic, and asphalt roofing products containing more than one percent asbestos. Asphalt roofing products which may contain asbestos include built-up roofing; asphalt-containing single ply membrane systems; asphalt shingles; asphalt-containing underlayment felts; asphalt-containing roof coatings and mastics; and asphalt-containing base flashings. ACM roofing products that use other bituminous or resinous binders (such as coal tars or pitches) are also considered to be Category I ACM. Category II ACM includes all other nonfriable ACM, for example, asbestos-cement (A/C) shingles, A/C tiles, and transite boards or panels containing more than one percent asbestos. Generally speaking, Category II ACM is more likely to become friable when damaged than is Category I ACM. The applicability of the NESHAP to Category I and II ACM depends on: (1) the condition of the material at the time of demolition or renovation, (2) the nature of the operation to which the material will be subjected, (3) the amount of ACM involved.

1.3. Asbestos-containing material regulated under the NESHAP is referred to as "regulated asbestos-containing material" (RACM). RACM is defined in § 61.141 of the NESHAP and includes: (1) friable asbestos-containing material; (2) Category I nonfriable ACM that has become friable; (3) Category I nonfriable

ACM that has been or will be sanded, ground, cut, or abraded; or (4) Category II nonfriable ACM that has already been or is likely to become crumbled, pulverized, or reduced to powder. If the coverage threshold for RACM is met or exceeded in a renovation or demolition operation, then all friable ACM in the operation, and in certain situations, nonfriable ACM in the operation, are subject to the NESHAP.

#### A. Threshold Amounts of Asbestos-Containing Roofing Material

1.A.1. The NESHAP does not cover roofing projects on single family homes or on residential buildings containing four or fewer dwelling units. 40 CFR 61.141. For other roofing renovation projects, if the total asbestos-containing roof area undergoing renovation is less than 160 ft<sup>2</sup>, the NESHAP does not apply, regardless of the removal method to be used, the type of material (Category I or II), or its condition (friable versus nonfriable). 40 CFR 61.145(a)(4). However, EPA would recommend the use of methods that damage asbestos-containing roofing material as little as possible. EPA has determined that where a rotating blade (RB) roof cutter or equipment that similarly damages the roofing material is used to remove Category I nonfriable asbestos-containing roofing material, the removal of 5580 ft<sup>2</sup> of that material will create 160 ft<sup>2</sup> of RACM. For the purposes of this interpretive rule, "RB roof cutter" means an engine-powered roof cutting machine with one or more rotating cutting blades the edges of which are blunt. (Equipment with blades having sharp or tapered edges, and/or which does not use a rotating blade, is used for "slicing" rather than "cutting" the roofing material; such equipment is not included in the term "RB roof cutter".) Therefore, it is EPA's interpretation that when an RB roof cutter or equipment that similarly damages the roofing material is used to remove Category I nonfriable asbestos-containing roofing material, any project that is 5580 ft<sup>2</sup> or greater is subject to the NESHAP; conversely, it is EPA's interpretation that when an RB roof cutter or equipment that similarly damages the roofing material is used to remove Category I nonfriable asbestos-containing roofing material in a roof removal project that is less than 5580 ft<sup>2</sup>, the project is not subject to the NESHAP, except that notification is always required for demolitions. EPA further construes the NESHAP to mean that if slicing or other methods that do not sand, grind, cut or abrade will be used on Category I nonfriable ACM, the NESHAP does not apply, regardless of the area of roof to be removed.

1.A.2. For asbestos cement (A/C) shingles (or other Category II roofing material), if the area of the roofing material to be removed is at least 160 ft<sup>2</sup> and the removal methods will

crumble, pulverize, reduce to powder, or contaminate with RACM (from other ACM that has been crumbled, pulverized or reduced to powder) 160 ft<sup>2</sup> or more of such roofing material, the removal is subject to the NESHAP. Conversely, if the area of the A/C shingles (or other Category II roofing materials) to be removed is less than 160 ft<sup>2</sup>, the removal is not subject to the NESHAP regardless of the removal method used, except that notification is always required for demolitions. 40 CFR 61.145(a). However, EPA would recommend the use of methods that damage asbestos-containing roofing material as little as possible. If A/C shingles (or other Category II roofing materials) are removed without 160 ft<sup>2</sup> or more of such roofing material being crumbled, pulverized, reduced to powder, or contaminated with RACM (from other ACM that has been crumbled, pulverized or reduced to powder), the operation is not subject to the NESHAP, even where the total area of the roofing material to be removed exceeds 160 ft<sup>2</sup>; provided, however, that if the renovation includes other operations involving RACM, the roof removal operation is covered if the total area of RACM from all renovation activities exceeds 160 ft<sup>2</sup>. See the definition of regulated asbestos-containing material (RACM), 40 CFR 61.141.

1.A.3. Only roofing material that meets the definition of ACM can qualify as RACM subject to the NESHAP. Therefore, to determine if a removal operation that meets or exceeds the coverage threshold is subject to the NESHAP, any suspect roofing material (*i.e.* roofing material that may be ACM) should be tested for asbestos. If any such roofing material contains more than one percent asbestos and if the removal operation is covered by the NESHAP, then EPA must be notified and the work practices in §61.145(c) must be followed. In EPA's view, if a removal operation involves at least the threshold level of suspect material, a roofing contractor may choose not to test for asbestos if the contractor follows the notification and work practice requirements of the NESHAP.

#### B. A/C Shingle Removal (Category II ACM Removal)

1.B.1. A/C shingles, which are Category II nonfriable ACM, become regulated ACM if the material has a high probability of becoming or has become crumbled, pulverized or reduced to powder by the forces expected to act on the material in the course of demolition or renovation operations. 40 CFR 61.141. However, merely breaking an A/C shingle (or any other category II ACM) that is not friable may not necessarily cause the material to become RACM. A/C shingles are typically nailed to buildings on which they are attached. EPA believes that the extent of breakage that will normally result from

carefully removing A/C shingles and lowering the shingles to the ground will not result in crumbling, pulverizing or reducing the shingles to powder. Conversely, the extent of breakage that will normally occur if the A/C shingles are dropped from a building or scraped off of a building with heavy machinery would cause the shingles to become RACM. EPA therefore construes the NESHAP to mean that the removal of A/C shingles that are not friable, using methods that do not crumble, pulverize, or reduce the A/C shingles to powder (such as pry bars, spud bars and shovels to carefully pry the material), is not subject to the NESHAP provided that the A/C shingles are properly handled during and after removal, as discussed in this paragraph and the asbestos NESHAP. This interpretation also applies to other Category II nonfriable asbestos-containing roofing materials.

#### C. Cutting vs. Slicing and Manual Methods for Removal of Category I ACM

1.C.1. Because of damage to the roofing material, and the potential for fiber release, roof removal operations using rotating blade (RB) roof cutters or other equipment that sand, grind, cut or abrade the roof material are subject to the NESHAP. As EPA interprets the NESHAP, the use of certain manual methods (using equipment such as axes, hatchets, or knives, spud bars, pry bars, and shovels, but not saws) or methods that slice, shear, or punch (using equipment such as a power slicer or power plow) does not constitute "cutting, sanding, grinding or abrading." This is because these methods do not destroy the structural matrix or integrity of the material such that the material is crumbled, pulverized or reduced to powder. Hence, it is EPA's interpretation that when such methods are used, assuming the roof material is not friable, the removal operation is not subject to the regulation.

1.C.2. Power removers or power tear-off machines are typically used to pry the roofing material up from the deck after the roof membrane has been cut. It is EPA's interpretation that when these machines are used to pry roofing material up, their use is not regulated by the NESHAP.

1.C.3. As noted previously, the NESHAP only applies to the removal of asbestos-containing roofing materials. Thus, the NESHAP does not apply to the use of RB cutters to remove non-asbestos built up roofing (BUR). On roofs containing some asbestos-containing and some non-asbestos-containing materials, coverage under the NESHAP depends on the methods used to remove each type of material in addition to other coverage thresholds specified above. For example, it is not uncommon for existing roofs to be made of non-asbestos BUR and base flashings that do contain asbestos.

In that situation, EPA construes the NESHAP to be inapplicable to the removal of the non-asbestos BUR using an RB cutter so long as the RB cutter is not used to cut 5580 ft<sup>2</sup> or more of the asbestos-containing base flashing or other asbestos-containing material into sections. In addition, the use of methods that slice, shear, punch or pry could then be used to remove the asbestos flashings and not trigger coverage under the NESHAP.

#### II. Notification

2.1. Notification for a demolition is always required under the NESHAP. However, EPA believes that few roof removal jobs constitute "demolitions" as defined in the NESHAP (§61.141). In particular, it is EPA's view that the removal of roofing systems (i.e., the roof membrane, insulation, surfacing, coatings, flashings, mastic, shingles, and felt underlayment), when such removal is not a part of a demolition project, constitutes a "renovation" under the NESHAP. If the operation is a renovation, and Category I roofing material is being removed using either manual methods or slicing, notification is not required by the NESHAP. If Category II material is not friable and will be removed without crumbling, pulverizing, or reducing it to powder, no notification is required. Also, if the renovation involves less than the threshold area for applicability as discussed above, then no notification is required. However, if a roof removal meets the applicability and threshold requirements under the NESHAP, then EPA (or the delegated agency) must be notified in advance of the removal in accordance with the requirements of §61.145(b), as follows:

- Notification must be given in writing at least 10 working days in advance and must include the information in §61.145(b)(4), except for emergency renovations as discussed below.
- The notice must be updated as necessary, including, for example, when the amount of asbestos-containing roofing material reported changes by 20 percent or more.
- EPA must be notified if the start date of the roof removal changes. If the start date of a roof removal project is changed to an earlier date, EPA must be provided with a written notice of the new start date at least 10 working days in advance. If the start date changes to a later date, EPA must be notified by telephone as soon as possible before the original start date and a written notice must be sent as soon as possible.
- For emergency renovations (as defined in §61.141), where work must begin immediately to avoid safety or public health hazards, equipment damage, or unreasonable financial burden, the notification must be post-marked or delivered to EPA as soon as possible, but no later than the following work day.

### III. Emission Control Practices

#### A. Requirements to Adequately Wet and Discharge No Visible Emission

3.A.1. The principal controls contained in the NESHAP for removal operations include requirements that the affected material be adequately wetted, and that asbestos waste be handled, collected, and disposed of properly. The requirements for disposal of waste materials are discussed separately in section IV below. The emission control requirements discussed in this section III apply only to roof removal operations that are covered by the NESHAP as set forth in Section I above.

3.A.2. For any operation subject to the NESHAP, the regulation (§§61.145(c)(2)(i), (3), (6)(i)) requires that RACM be adequately wet (as defined in §61.141) during the operation that damages or disturbs the asbestos material until collected for disposal.

3.A.3. When using an RB roof cutter (or any other method that sands, grinds, cuts or abrades the roofing material) to remove Category I asbestos-containing roofing material, the emission control requirements of §61.145(c) apply as discussed in Section I above. EPA will consider a roof removal project to be in compliance with the "adequately wet" and "discharge no visible emission" requirements of the NESHAP if the RB roof cutter is equipped and operated with the following: (1) a blade guard that completely encloses the blade and extends down close to the roof surface; and (2) a device for spraying a fine mist of water inside the blade guard, and which device is in operation during the cutting of the roof.

#### B. Exemptions From Wetting Requirements

3.B.1. The NESHAP provides that, in certain instances, wetting may not be required during the cutting of Category I asbestos roofing material with an RB roof cutter. If EPA determines in accordance with §61.145(c)(3)(i), that wetting will unavoidably damage the building, equipment inside the building, or will present a safety hazard while stripping the ACM from a facility component that remains in place, the roof removal operation will be exempted from the requirement to wet during cutting. EPA must have sufficient written information on which to base such a decision. Before proceeding with a dry removal, the contractor must have received EPA's written approval. Such exemptions will be made on a case-by-case basis.

3.B.2. It is EPA's view that, in most instances, exemptions from the wetting requirements are not necessary. Where EPA grants an exemption from wetting because of the potential for damage to the building, damage to equipment within the building or a safety hazard, the NESHAP specifies alternative control methods (§61.145(c)(3)(i)(B)).

Alternative control methods include (a) the use of local exhaust ventilation systems that capture the dust, and do not produce visible emissions, or (b) methods that are designed and operated in accordance with the requirements of §61.152, or (c) other methods that have received the written approval of EPA. EPA will consider an alternative emission control method in compliance with the NESHAP if the method has received written approval from EPA and the method is being implemented consistent with the approved procedures (§61.145(c)(3)(ii) or §61.152(b)(3)).

3.B.3. An exemption from wetting is also allowed when the air or roof surface temperature at the point of wetting is below freezing, as specified in §61.145(c)(7). If freezing temperatures are indicated as the reason for not wetting, records must be kept of the temperature at the beginning, middle and end of the day on which wetting is not performed and the records of temperature must be retained for at least 2 years. 42 CFR §61.145(c)(7)(iii). It is EPA's interpretation that in such cases, no written application to, or written approval by the Administrator is needed for using emission control methods listed in §61.145(c)(3)(i)(B), or alternative emission control methods that have been previously approved by the Administrator. However, such written application or approval is required for alternative emission control methods that have not been previously approved. Any dust and debris collected from cutting must still be kept wet and placed in containers. All of the other requirements for notification and waste disposal would continue to apply as described elsewhere in this notice and the Asbestos NESHAP.

#### C. Waste Collection and Handling

3.C.1. It is EPA's interpretation that waste resulting from slicing and other methods that do not cut, grind, sand or abrade Category I nonfriable asbestos-containing roofing material is not subject to the NESHAP and can be disposed of as nonasbestos waste. EPA further construes the NESHAP to provide that if Category II roofing material (such as A/C shingles) is removed and disposed of without crumbling, pulverizing, or reducing it to powder, the waste from the removal is not subject to the NESHAP waste disposal requirements. EPA also interprets the NESHAP to be inapplicable to waste resulting from roof removal operations that do not meet or exceed the coverage thresholds described in section I above. Of course, other State, local, or Federal regulations may apply.

3.C.2. It is EPA's interpretation that when an RB roof cutter, or other method that similarly damages the roofing material, is used to cut Category I asbestos containing roofing material, the damaged material from

the cut (the sawdust or debris) is considered asbestos containing waste subject to §61.150 of the NESHAP, provided the coverage thresholds discussed above in section 1 are met or exceeded. This sawdust or debris must be disposed of at a disposal site operated in accordance with the NESHAP. It is also EPA's interpretation of the NESHAP that if the remainder of the roof is free of the sawdust and debris generated by the cutting, or if such sawdust or debris is collected as discussed below in paragraphs 3.C.3, 3.C.4, 3.C.5 and 3.C.6, the remainder of the roof can be disposed of as nonasbestos waste because it is considered to be Category I nonfriable material (as long as the remainder of the roof is in fact nonasbestos material or if it is Category I asbestos material and the removal methods do not further sand, grind, cut or abrade the roof material). EPA further believes that if the roof is not cleaned of such sawdust or debris, *i.e.*, it is contaminated, then it must be treated as asbestos-containing waste material and be handled in accordance with §61.150.

3.C.3. In order to be in compliance with the NESHAP while using an RB roof cutter (or device that similarly damages the roofing material) to cut Category I asbestos containing roofing material, the dust and debris resulting from the cutting of the roof should be collected as soon as possible after the cutting operation, and kept wet until collected and placed in leak-tight containers. EPA believes that where the blade guard completely encloses the blade and extends down close to the roof surface and is equipped with a device for spraying a fine mist of water inside the blade guard, and the spraying device is in operation during the cutting, most of the dust and debris from cutting will be confined along the cut. The most efficient methods to collect the dust and debris from cutting are to immediately collect or vacuum up the damaged material where it lies along the cut using a filtered vacuum cleaner or debris collector that meets the requirements of 40 CFR 61.152 to clean up as much of the debris as possible, or to gently sweep up the bulk of the debris, and then use a filtered vacuum cleaner that meets the requirements of 40 CFR 61.152 to clean up as much of the remainder of the debris as possible. On smooth surfaced roofs (nonaggregate roofs), sweeping up the debris and then wet wiping the surface may be done in place of using a filtered vacuum cleaner. It is EPA's view that if these decontamination procedures are followed, the remaining roofing material does not have to be collected and disposed of as asbestos waste. Additionally, it is EPA's view that where such decontamination procedures are followed, if the remaining portions of the roof are non-asbestos or Category I nonfriable asbestos material, and if the remaining portions are removed using removal methods that slice, shear, punch or

pry, as discussed in section 1.C above, then the remaining portions do not have to be collected and disposed of as asbestos waste and the NESHAP's no visible emissions and adequately wet requirements are not applicable to the removal of the remaining portions. In EPA's interpretation, the failure of a filtered vacuum cleaner or debris collector to collect larger chunks or pieces of damaged roofing material created by the RB roof cutter does not require the remaining roofing material to be handled and disposed of as asbestos waste, provided that such visible chunks or pieces of roofing material are collected (e.g. by gentle sweeping) and disposed of as asbestos waste. Other methods of decontamination may not be adequate, and should be approved by the local delegated agency.

3.C.4. In EPA's interpretation, if the debris from the cutting is not collected immediately, it will be necessary to lightly mist the dust or debris, until it is collected, as discussed above, and placed in containers. The dust or debris should be lightly misted frequently enough to prevent the material from drying, and to prevent airborne emissions, prior to collection as described above. It is EPA's interpretation of the NESHAP that if these procedures are followed, the remaining roofing material does not have to be collected and disposed of as asbestos waste, as long as the remaining roof material is in fact nonasbestos material or if it is Category I asbestos material and the removal methods do not further sand, grind, cut or abrade the roof material.

3.C.5. It is EPA's interpretation that, provided the roofing material is not friable prior to the cutting operation, and provided the roofing material has not been made friable by the cutting operation, the appearance of rough, jagged or damaged edges on the remaining roofing material, due to the use of an RB roof cutter, does not require that such remaining roofing material be handled and disposed of as asbestos waste. In addition, it is also EPA's interpretation that if the sawdust or debris generated by the use of an RB roof cutter has been collected as discussed in paragraphs 3.C.3, 3.C.4 and 3.C.6, the presence of dust along the edge of the remaining roof material does not render such material "friable" for purposes of this interpretive rule or the NESHAP, provided the roofing material is not friable prior to the cutting operation, and provided that the remaining roofing material near the cutline has not been made friable by the cutting operation. Where roofing material near the cutline has been made friable by the use of the RB cutter (*i.e.* where such remaining roofing material near the cutline can be crumbled, pulverized or reduced to powder using hand pressure), it is EPA's interpretation that the use of an encapsulant will ensure that such friable material need not be treated or disposed of as asbestos containing

waste material. The encapsulant may be applied to the friable material after the roofing material has been collected into stacks for subsequent disposal as nonasbestos waste. It is EPA's view that if the encapsulation procedure set forth in this paragraph is followed in operations where roofing material near the cutline has been rendered friable by the use of an RB roof cutter, and if the decontamination procedures set forth in paragraph 3.C.3 have been followed, the NESHAP's no visible emissions and adequately wet requirements would be met for the removal, handling and disposal of the remaining roofing material.

3.C.6. As one way to comply with the NESHAP, the dust and debris from cutting can be placed in leak-tight containers, such as plastic bags, and the containers labeled using warning labels required by OSHA (29 CFR 1926.58). In addition, the containers must have labels that identify the waste generator (such as the name of the roofing contractor, abatement contractor, and/or building owner or operator) and the location of the site at which the waste was generated.

#### IV. Waste Disposal

##### A. Disposal Requirements

4.A.1. Section 61.150(b) requires that, as soon as is practical, all collected dust and debris from cutting as well as any contaminated roofing squares, must be taken to a landfill that is operated in accordance with §61.154 or to an EPA-approved site that converts asbestos waste to nonasbestos material in accordance with §61.155. During the loading and unloading of affected waste, asbestos warning signs must be affixed to the vehicles.

##### B. Waste Shipment Record

4.B.1. For each load of asbestos waste that is regulated under the NESHAP, a waste shipment record (WSR) must be maintained in accordance with §61.150(d). Information that must be maintained for each waste load includes the following:

- Name, address, and telephone number of the waste generator
- Name and address of the local, State, or EPA regional office responsible for administering the asbestos NESHAP program
- Quantity of waste in cubic meters (or cubic yards)
- Name and telephone number of the disposal site operator
- Name and physical site location of the disposal site
- Date transported
- Name, address, and telephone number of the transporter(s)
- Certification that the contents meet all government regulations for transport by highways.

4.B.2. The waste generator is responsible for ensuring that a copy of the WSR is delivered to the disposal site along with the waste shipment. If a copy of the WSR signed by the disposal site operator is not returned to the waste generator within 35 days, the waste generator must contact the transporter and/or the disposal site to determine the status of the waste shipment. 40 CFR 61.150(d)(3). If the signed WSR is not received within 45 days, the waste generator must report, in writing, to the responsible NESHAP program agency and send along a copy of the WSR. 40 CFR 61.150(d)(4). Copies of WSRs, including those signed by the disposal site operator, must be retained for at least 2 years. 40 CFR 61.150(d)(5).

#### V. Training

5.1. For those roof removals that are subject to the NESHAP, at least one on-site supervisor trained in the provisions of the NESHAP must be present during the removal of the asbestos roofing material. 40 CFR 61.145(c)(8). In EPA's view, this person can be a job foreman, a hired consultant, or someone who can represent the building owner or contractor responsible for the removal. In addition to the initial training requirement, a refresher training course is required every 2 years. The NESHAP training requirements became effective on November 20, 1991.

5.2. Asbestos training courses developed specifically to address compliance with the NESHAP in roofing work, as well as courses developed for other purposes can satisfy this requirement of the NESHAP, as long as the course covers the areas specified in the regulation. EPA believes that Asbestos School Hazard Emergency Response Act (ASHERA) training courses will, for example, satisfy the NESHAP training requirements. However, nothing in this interpretive rule or in the NESHAP shall be deemed to require that roofing contractors or roofing workers performing operations covered by the NESHAP must be trained or accredited under ASHERA, as amended by the Asbestos School Hazard Abatement Reauthorization Act (ASHARA). Likewise, state or local authorities may independently impose additional training, licensing, or accreditation requirements on roofing contractors performing operations covered by the NESHAP, but such additional training, licensing or accreditation is not called for by this interpretive rule or the federal NESHAP.

5.3. For removal of Category I asbestos containing roofing material where RB roof cutters or equipment that similarly damages the asbestos-containing roofing material are used, the NESHAP training requirements (§61.145(c)(8)) apply as discussed in Section I above. It is EPA's intention that removal of

Category I asbestos-containing roofing material using hatchets, axes, knives, and/or the use of spud bars, pry bars and shovels to lift the roofing material, or similar removal methods that slice, punch, or shear the roof membrane are not subject to the training requirements, since these methods do not cause the roof removal to be subject to the NESHAP. Likewise, it is EPA's intention that roof removal operations involving Category II nonfriable ACM are not subject to the training requirements where such operations are not subject to the NESHAP as discussed in section I above.

[59 FR 31158, June 17, 1994, as amended at 60 FR 31920, June 19, 1995]

### Subpart N—National Emission Standard for Inorganic Arsenic Emissions From Glass Manufacturing Plants

SOURCE: 51 FR 28025, Aug. 4, 1986, unless otherwise noted.

#### § 61.160 Applicability and designation of source.

(a) The source to which this subpart applies is each glass melting furnace that uses commercial arsenic as a raw material. This subpart does not apply to pot furnaces.

(b) Rebrickng is not considered construction or modification for the purposes of § 61.05(a).

#### § 61.161 Definitions.

The terms used in this subpart are defined in the Clean Air Act, in § 61.02, or in this section as follows:

*Arsenic-containing glass type* means any glass that is distinguished from other glass solely by the weight percent of arsenic added as a raw material and by the weight percent of arsenic in the glass produced. Any two or more glasses that have the same weight percent of arsenic in the raw materials as well as in the glass produced shall be considered to belong to one arsenic-containing glass type, without regard to the recipe used or any other characteristics of the glass or the method of production.

*By-pass the control device* means to operate the glass melting furnace without operating the control device to which that furnace's emissions are directed routinely.

*Commercial arsenic* means any form of arsenic that is produced by extraction from any arsenic-containing substance and is intended for sale or for intentional use in a manufacturing process. Arsenic that is a naturally occurring trace constituent of another substance is not considered "commercial arsenic."

*Cullet* means waste glass recycled to a glass melting furnace.

*Glass melting furnace* means a unit comprising a refractory vessel in which raw materials are charged, melted at high temperature, refined, and conditioned to produce molten glass. The unit includes foundations, superstructure and retaining walls, raw material charger systems, heat exchangers, melter cooling system, exhaust system, refractory brick work, fuel supply and electrical boosting equipment, integral control systems and instrumentation, and appendages for conditioning and distributing molten glass to forming apparatuses. The forming apparatuses, including the float bath used in flat glass manufacturing, are not considered part of the glass melting furnace.

*Glass produced* means the glass pulled from the glass melting furnace.

*Inorganic arsenic* means the oxides and other noncarbon compounds of the element arsenic included in particulate matter, vapors, and aerosols.

*Malfunction* means any sudden failure of air pollution control equipment or process equipment or of a process to operate in a normal or usual manner so that emissions of arsenic are increased.

*Pot furnace* means a glass melting furnace that contains one or more refractory vessels in which glass is melted by indirect heating. The openings of the vessels are in the outside wall of the furnace and are covered with refractory stoppers during melting.

*Rebrickng* means cold replacement of damaged or worn refractory parts of the glass melting furnace. Rebrickng includes replacement of the refractories comprising the bottom, sidewalls, or roof of the melting vessel; replacement of refractory work in the heat exchanger; and replacement of refractory portions of the glass conditioning and distribution system.

*Shutdown* means the cessation of operation of an affected source for any purpose.

*Theoretical arsenic emissions factor* means the amount of inorganic arsenic, expressed in grams per kilogram of glass produced, as determined based on a material balance.

*Uncontrolled total arsenic emissions* means the total inorganic arsenic in the glass melting furnace exhaust gas preceding any add-on emission control device.

[51 FR 28025, Aug. 4, 1986; 51 FR 35355, Oct. 3, 1986]

#### § 61.162 Emission limits.

(a) The owner or operator of an existing glass melting furnace subject to the provisions of this subpart shall comply with either paragraph (a)(1) or (a)(2) of this section; except as provided in paragraph (c) of this section.

(1) Uncontrolled total arsenic emissions from the glass melting furnace shall be less than 2.5 Mg per year, or

(2) Total arsenic emissions from the glass melting furnace shall be conveyed to a control device and reduced by at least 85 percent.

(b) The owner or operator of a new or modified glass melting furnace subject to the provisions of this subpart shall comply with either paragraph (b)(1) or (b)(2) of this section, except as provided in paragraph (c) of this section.

(1) Uncontrolled total arsenic emissions from the glass melting furnace shall be less than 0.4 Mg per year, or

(2) Total arsenic emissions from the glass melting furnace shall be conveyed to a control device and reduced by at least 85 percent.

(c) An owner or operator of a source subject to the requirements of this section may, after approval by the Administrator, bypass the control device to which arsenic emissions from the furnace are directed for a limited period of time for designated purposes such as maintenance of the control device, as specified in § 61.165(e).

(d) At all times, including periods of startup, shutdown, and malfunction, the owner or operator of a glass melting furnace subject to the provisions of this subpart shall operate and maintain the furnace and associated air pollution control equipment in a manner

consistent with good air pollution control practice for minimizing emissions of inorganic arsenic to the atmosphere to the maximum extent practicable. Determination of whether acceptable operating and maintenance procedures are being used will be based on information available to the Administrator, which may include, but is not limited to, monitoring results, review of operating and maintenance procedures, inspection of the source, and review of other records.

#### § 61.163 Emission monitoring.

(a) An owner or operator of a glass melting furnace subject to the emission limit in § 61.162(a)(2) or § 61.162(b)(2) shall:

(1) Install, calibrate, maintain, and operate a continuous monitoring system for the measurement of the opacity of emissions discharged into the atmosphere from the control device; and

(2) Install, calibrate, maintain, and operate a monitoring device for the continuous measurement of the temperature of the gas entering the control device.

(b) All continuous monitoring systems and monitoring devices shall be installed and operational prior to performance of an emission test required by § 61.164(a). Verification of operational status shall, at a minimum, consist of an evaluation of the monitoring system in accordance with the requirements and procedures contained in Performance Specification 1 of appendix B of 40 CFR part 60.

(c) During the emission test required in § 61.164(a) each owner or operator subject to paragraph (a) of this section shall:

(1) Conduct continuous opacity monitoring from the beginning of the first test run until the completion of the third test run. Process and control equipment shall be operated in a manner that will minimize opacity of emissions, subject to the Administrator's approval.

(2) Calculate 6-minute opacity averages from 24 or more data points equally spaced over each 6-minute period during the test runs.

(3) Determine, based on the 6-minute opacity averages, the opacity value corresponding to the 97.5 percent upper

confidence level of a normal or log-normal (whichever the owner or operator determines is more representative) distribution of the average opacity values.

(4) Conduct continuous monitoring of the temperature of the gas entering the control device from the beginning of the first test run until completion of the third test run.

(5) Calculate 15-minute averages of the temperature of the gas entering the control device during each test run.

(d) An owner or operator may re-determine the values described in paragraph (c) of this section during any emission test that demonstrates compliance with the emission limits in § 61.162(a)(2) or § 61.162(b)(2).

(e) The requirements of § 60.13(d) and § 60.13(f) shall apply to an owner or operator subject to paragraph (a) of this section.

(f) Except for system breakdowns, repairs, calibration checks, and zero and span adjustments required under § 60.13(d), all continuous monitoring systems shall be in continuous operation and shall meet minimum frequency of operation requirements by completing a minimum of one cycle of sampling and analyzing for each successive 10-second period and one cycle of data recording for each successive 6-minute period.

(g) An owner or operator subject to paragraph (a) of this section shall:

(1) Reduce all opacity data to 6-minute averages. Six-minute averages shall be calculated from 24 or more data points equally spaced over each 6-minute period. Data recorded during periods of monitoring system breakdowns, repairs, calibration checks, and zero and span adjustments shall not be included in the data averages calculated under this paragraph, and

(2) Calculate 15-minute averages of the temperature of the gas entering the control device for each 15-minute operating period.

(h) After receipt and consideration of written application, the Administrator may approve alternative monitoring systems for the measurement of one or more process or operating parameters that is or are demonstrated to enable accurate and representative monitoring of a properly operating control de-

vice. Upon approval of an alternative monitoring system for an affected source, the Administrator will specify requirements to replace the requirements of paragraphs (a)–(g) of this section for that system.

#### § 61.164 Test methods and procedures.

(a) To demonstrate compliance with § 61.162, the owner or operator shall conduct emission tests, reduce test data, and follow the procedures specified in this section unless the Administrator:

(1) Specifies or approves, in specific cases, the use of a reference method with minor changes in methodology;

(2) Approves the use of an equivalent method;

(3) Approves the use of an alternative method the results of which he has determined to be adequate for indicating whether a specific source is in compliance; or

(4) Waives the requirement for emission tests as provided under § 61.13.

(b) Unless a waiver of emission testing is obtained, the owner or operator shall conduct emission tests required by this section:

(1) No later than 90 days after the effective date of this subpart for a source that has an initial startup date preceding the effective date; or

(2) No later than 90 days after startup for a source that has an initial startup date after the effective date.

(3) At such other times as may be required by the Administrator under section 114 of the Act.

(4) While the source is operating under such conditions as the Administrator may specify, based on representative performance of the source.

(c) To demonstrate compliance with § 61.162(a)(1) when less than 8.0 Mg per year of elemental arsenic is added to any existing glass melting furnace, or to demonstrate compliance with § 61.162(b)(1) when less than 1.0 Mg per year of elemental arsenic is added to any new or modified glass melting furnace, an owner or operator shall:

(1) Derive a theoretical uncontrolled arsenic emission factor (T), in grams of elemental arsenic per kilogram of glass produced, based on material balance

calculations for each arsenic-containing glass type (i) produced during the 12-month period, as follows:

$$T_i = (A_{bi} \times W_{bi}) + (A_{ci} \times W_{ci}) - A_{gi}$$

Where:

$T_i$  = the theoretical uncontrolled arsenic emission factor (g/kg) for each glass type (i).

$A_{bi}$  = fraction by weight of elemental arsenic in the fresh batch for each glass type (i).

$W_{bi}$  = weight (g) of fresh batch melted per kg of glass produced for each glass type (i).

$A_{ci}$  = fraction by weight of elemental arsenic in cullet for each glass type (i).

$W_{ci}$  = weight (g) of cullet melted per kg of glass produced for each glass type (i).

$A_{gi}$  = weight (g) of elemental arsenic per kg glass produced for each glass type (i).

(2) Estimate theoretical uncontrolled arsenic emissions for the 12-month period for each arsenic-containing glass type as follows:

$$Y_i = \frac{(T_i \times G_i)}{10^6}$$

Where:

$Y_i$  = the theoretical uncontrolled arsenic emission estimate for the 12-month period for each glass type (Mg/year).

$T_i$  = the theoretical uncontrolled arsenic emission factor for each type of glass (i) produced during the 12-month period as calculated in paragraph (c)(1) of this section (g/kg).

$G_i$  = the quantity (kg) of each arsenic-containing glass type (i) produced during the 12-month period.

(3) Estimate the total theoretical uncontrolled arsenic emissions for the 12-month period by finding the sum of the values calculated for  $Y_i$  in paragraph (c)(2) of this section.

(4) If the value determined in paragraph (c)(3) of this section is equal to or greater than the applicable limit in § 61.162(a)(1) or (b)(1), conduct the emission testing and calculations described in paragraphs (d)(1) through (d)(5) of this section. If the value is less than the applicable limit, the source is in compliance and no emission testing or additional calculations are required.

(d) To demonstrate compliance with § 61.162(a)(1) when 8.0 Mg per year or more of elemental arsenic are added to any existing glass melting furnace, or to demonstrate compliance with § 61.162(b)(1) when 1.0 Mg per year or more of elemental arsenic is added to

any new or modified glass melting furnace, an owner or operator shall:

(1) Estimate the theoretical uncontrolled arsenic emissions for each glass type for the 12-month period by performing the calculations described in paragraphs (c)(1) and (c)(2) of this section.

(2) Conduct emission testing to determine the actual uncontrolled arsenic emission rate during production of the arsenic-containing glass type with the highest theoretical uncontrolled arsenic emissions as calculated under paragraph (d)(1) of this section. The owner or operator shall use the following test methods and procedures:

(i) Use Method 108 in appendix B to this part for determining the arsenic emission rate (g/h). The emission rate shall equal the arithmetic mean of the results of three 60-minute test runs.

(ii) Use the following methods in appendix A to 40 CFR part 60:

(A) Method 1 for sample and velocity traverse.

(B) Method 2 for velocity and volumetric flowrate.

(C) Method 3 for gas analysis.

(D) For sources equipped with positive pressure fabric filters, use Section 4 of Method 5D to determine a suitable sampling location and procedure.

(3) Determine the actual uncontrolled arsenic emission factor ( $R_a$ ) in grams of elemental arsenic per kilogram of glass produced, as follows:

$$R_a = E_a + P$$

Where:

$R_a$  = the actual uncontrolled arsenic emission factor (g/kg).

$E_a$  = the actual uncontrolled arsenic emission rate (g/h) from paragraph (d)(2) of this section.

$P$  = the rate of glass production (kg/h), determined by dividing the weight (kg) of glass pulled from the furnace during the emission test by the number of hours (h) taken to perform the test under paragraph (d)(2) of this section.

(4) Calculate a correction factor to relate the theoretical and the actual uncontrolled arsenic emission factors as follows:

$$F = R_a + T_i$$

Where:

$F$  = the correction factor.

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R<sub>a</sub>=the actual uncontrolled arsenic emission factor (g/kg) determined in paragraph (d)(3) of this section.

T<sub>i</sub>=the theoretical uncontrolled arsenic emission factor (g/kg) determined in paragraph (c)(1) of this section for the same glass type for which R<sub>a</sub> was determined.

(5) Determine the uncontrolled arsenic emission rate for the 12-month period, as follows:

$$U = \frac{\sum_{i=1}^n (T_i \times F \times G_i)}{10^6}$$

Where:

U=the uncontrolled arsenic emission rate for the 12-month period (Mg/year).

T<sub>i</sub>=the theoretical uncontrolled arsenic emission factor for each arsenic-containing glass type (i) produced during the 12-month period, as calculated in paragraph (c)(1) of this section (g/kg).

F=the correction factor calculated in paragraph (d)(4) of this section.

G<sub>i</sub>=the quantity (kg) of each arsenic-containing glass type (i) produced during the 12-month period.

n=the number of arsenic-containing glass types produced during the 12-month period.

(6) If the value determined in paragraph (d)(5) of this section is less than the applicable limit in §61.162(a)(1) or (b)(1), the source is in compliance.

(e) To demonstrate compliance with §61.162(a)(2) or (b)(2), an owner or operator shall:

(1) Conduct emission testing to determine the percent reduction of inorganic arsenic emissions being achieved by the control device, using the following test methods and procedures:

(i) Use Method 108 in appendix B to this part to determine the concentration of arsenic in the gas streams entering and exiting the control device. Conduct three 60-minute test runs, each consisting of simultaneous testing of the inlet and outlet gas streams. The gas streams shall contain all the gas exhausted from the glass melting furnace.

(ii) Use the following methods in appendix A to 40 CFR part 60:

(A) Method 1 for sample and velocity traverses.

(B) Method 2 for velocity and volumetric flowrate.

(C) Method 3 for gas analysis.

(D) For sources equipped with positive pressure fabric filters, use Section 4 of Method 5D to determine a suitable sampling location and procedure.

(2) Calculate the percent emission reduction for each run as follows:

$$D = \frac{(C_b - C_a) \times 100}{C_b}$$

Where:

D= the percent emission reduction.

C<sub>b</sub>= the arsenic concentration of the stack gas entering the control device, as measured by Method 108.

C<sub>a</sub>= the arsenic concentration of the stack gas exiting the control device, as measured by Method 108.

(3) Determine the average percent reduction of arsenic by calculating the arithmetic mean of the results for the three runs. If it is at least 85 percent, the source is in compliance.

[51 FR 28025, Aug. 4, 1986; 51 FR 35355, Oct. 3, 1986, as amended at 55 FR 22027, May 31, 1990]

**§61.165 Reporting and recordkeeping requirements.**

(a) Each owner or operator of a source subject to the requirements of §61.162 shall maintain at the source for a period of at least 2 years and make available to the Administrator upon request a file of the following records:

(1) All measurements, including continuous monitoring for measurement of opacity, and temperature of gas entering a control device;

(2) Records of emission test data and all calculations used to produce the required reports of emission estimates to demonstrate compliance with §61.162;

(3) All continuous monitoring system performance evaluations, including calibration checks and adjustments;

(4) The occurrence and duration of all startups, shutdowns, and malfunctions of the furnace;

(5) All malfunctions of the air pollution control system;

(6) All periods during which any continuous monitoring system or monitoring device is inoperative;

(7) all records of maintenance and repairs for each air pollution control system, continuous monitoring system, or monitoring device;

(b) Each owner or operator who is given approval by the Administrator to

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bypass a control device under paragraph (e) of this section shall maintain at the source for a period of at least 2 years and make available to the Administrator upon request a file of the following records:

(1) The dates the control device is bypassed; and

(2) Steps taken to minimize arsenic emissions during the period the control device was bypassed.

(c) Each owner or operator of a source subject to the emission limit in §61.162(a)(1) or (b)(1) shall determine and record at the end of every 6 months the uncontrolled arsenic emission rate for the preceding and forthcoming 12-month periods. The determinations shall:

(1) Be made by following the procedures in §61.164(c)(1), (c)(2), and (c)(3); or in §61.164(d)(5), whichever is applicable; and

(2) Take into account changes in production rates, types of glass produced, and other factors that would affect the uncontrolled arsenic emission rate.

(d) Each owner or operator of a source subject to the provisions of this subpart shall:

(1) Provide the Administrator 30 days prior notice of any emission test required in §61.164 to afford the Administrator the opportunity to have an observer present; and

(2) Submit to the Administrator a written report of the results of the emission test and associated calculations required in §61.164(d) or (e), as applicable, within 60 days after conducting the test.

(3) Submit to the Administrator a written report of the arsenic emission estimates calculated under §61.164(c):

(i) Within 45 days after the effective date of this subpart for a source that has an initial startup date preceding the effective date; or

(ii) Within 45 days after startup for a source that has an initial startup date after the effective date.

(4) Submit to the Administrator a written report of the uncontrolled arsenic emission rates determined in accordance with paragraph (c) of this section, if:

(i) The emission rate for the preceding 12-month period (or preceding 6-month period for the first 6-month de-

termination) exceeded the applicable limit in §61.162(a)(1) or (b)(1).

(ii) The emission rate for the forthcoming 12-month period will exceed the applicable limit in §61.162(a)(1) or (b)(1). In this case, the owner or operator shall also notify the Administrator of the anticipated date of the emission test to demonstrate compliance with the applicable limit in §61.162(a)(2) or (b)(2).

(5) Ensure that the reports required in paragraph (d)(4) of this section are postmarked by the tenth day following the end of the 6-month reporting period.

(e) To obtain approval to bypass a control device, as provided in §61.162(c), an owner or operator of a source subject to this subpart may make written application to the Administrator. Each application for such a waiver shall be submitted to the Administrator no later than 60 days before the bypass period would begin and shall include:

(1) Name and address of the owner or operator;

(2) Location of the source;

(3) A brief description of the nature, size, design, and method of operation of the source;

(4) The reason it is necessary to bypass the control device;

(5) The length of time it will be necessary to by-pass the control device;

(6) Steps that will be taken to minimize arsenic emissions during the period the control device will be bypassed.

(7) The quantity of emissions that would be released while the control device is by-passed if no steps were taken to minimize emissions;

(8) The expected reduction in emissions during the by-pass period due to the steps taken to minimize emissions during this period; and

(9) The type of glass to be produced during the bypass period, and, if applicable, an explanation of why non-arsenic or lower-arsenic-containing glass cannot be melted in the furnace during the bypass period.

(f) Each owner or operator required to install and operate a continuous opacity monitoring system under §61.163 shall:

(1) Submit a written report to the Administrator of the results of the continuous monitoring system evaluation required under § 61.163(b) within 60 days after conducting the evaluation.

(2) Submit a written report to the Administrator every 6 months if excess opacity occurred during the preceding 6-month period. For purposes of this paragraph, an occurrence of excess opacity is any 6-minute period during which the average opacity, as measured by the continuous monitoring system, exceeds the opacity level determined under § 61.163(c)(3) or the opacity level redetermined under § 61.163(d).

(3) Ensure that any semiannual report of excess opacity required by paragraph (f)(2) of this section is post-marked by the thirtieth day following the end of the 6-month period and includes the following information:

(i) The magnitude of excess opacity, any conversion factor(s) used, and the date and time of commencement and completion of each occurrence of excess opacity.

(ii) Specific identification of each occurrence of excess opacity that occurs during startups, shutdowns, and malfunctions of the source.

(iii) The date and time identifying each period during which the continuous monitoring system was inoperative, except for zero and span checks, and the nature of the system repairs or adjustments.

### Subpart O—National Emission Standard for Inorganic Arsenic Emissions From Primary Copper Smelters

SOURCE: 51 FR 28029, Aug. 4, 1986, unless otherwise noted.

#### § 61.170 Applicability and designation of source.

The provisions of this subpart are applicable to each copper converter at any new or existing primary copper smelter, except as noted in § 61.172(a).

#### § 61.171 Definitions.

All terms used in this subpart shall have the meanings given to them in the Act, in subpart A of part 61, and in this section as follows:

*Blowing* means the injection of air or oxygen-enriched air into a molten converter bath.

*Charging* means the addition of a molten or solid material to a copper converter.

*Control device* means the air pollution control equipment used to collect particulate matter emissions.

*Converter arsenic charging rate* means the hourly rate at which arsenic is charged to the copper converters in the copper converter department based on the arsenic content of the copper matte and of any lead matte that is charged to the copper converters.

*Copper converter* means any vessel in which copper matte is charged and is oxidized to copper.

*Copper converter department* means all copper converters at a primary copper smelter.

*Copper matte* means any molten solution of copper and iron sulfides produced by smelting copper sulfide ore concentrates or calcines.

*Holding of a copper converter*  means suspending blowing operations while maintaining in a heated state the molten bath in the copper converter.

*Inorganic arsenic* means the oxides and other noncarbon compounds of the element arsenic included in particulate matter, vapors, and aerosols.

*Lead matte* means any molten solution of copper and other metal sulfides produced by reduction of sinter product from the oxidation of lead sulfide ore concentrates.

*Malfunction* means any sudden failure of air pollution control equipment or process equipment or of a process to operate in a normal or usual manner so that emissions of inorganic arsenic are increased.

*Opacity* means the degree to which emissions reduce the transmission of light.

*Particulate matter* means any finely divided solid or liquid material, other than uncombined water, as measured by the specified reference method.

*Pouring* means the removal of blister copper from the copper converter bath.

*Primary copper smelter* means any installation or intermediate process engaged in the production of copper from copper-bearing materials through the use of pyrometallurgical techniques.

*Primary emission control system* means the hoods, ducts, and control devices used to capture, convey, and collect process emissions.

*Process emissions* means inorganic arsenic emissions from copper converters that are captured directly at the source of generation.

*Secondary emissions* means inorganic arsenic emissions that escape capture by a primary emission control system.

*Secondary hood system* means the equipment (including hoods, ducts, fans, and dampers) used to capture and transport secondary inorganic arsenic emissions.

*Shutdown* means the cessation of operation of a stationary source for any reason.

*Skimming* means the removal of slag from the molten converter bath.

**§ 61.172 Standard for new and existing sources.**

(a) The provisions of paragraphs (b)-(f) of this section do not apply to any copper converter at a facility where the total arsenic charging rate for the copper converter department averaged over a 1-year period is less than 75 kg/h, as determined under § 61.174(f).

(b) The owner or operator of each copper converter subject to the provisions of this subpart shall reduce inorganic arsenic emissions to the atmosphere by meeting the following design, equipment, work practice, and operational requirements:

(1) Install, operate, and maintain a secondary hood system on each copper converter. Each secondary hood system shall consist of a hood enclosure, air curtain fan(s), exhaust system fan(s), and ductwork that conveys the captured emissions to a control device, and shall meet the following specifications:

(i) The configuration and dimensions of the hood enclosure shall be such that the copper converter mouth, charging ladles, skimming ladles, and any other material transfer vessels used will be housed within the confines or influence of the hood enclosure during each mode of copper converter operation.

(ii) The back of the hood enclosure shall be fully enclosed and sealed against the primary hood. Portions of

the side-walls in contact with the copper converter shall be sealed against the converter.

(iii) Openings in the top and front of the hood enclosure to allow for the entry and egress of ladles and crane apparatus shall be minimized to the fullest extent practicable.

(iv) The hood enclosure shall be fabricated in such a manner and of materials of sufficient strength to withstand incidental contact with ladles and crane apparatus with no significant damage.

(v) One side-wall of the hood enclosure shall be equipped with a horizontal-slotted plenum along the top, and the opposite side-wall shall be equipped with an exhaust hood. The horizontal-slotted plenum shall be designed to allow the distance from the base to the top of the horizontal slot to be adjustable up to a dimension of 76 mm.

(vi) The horizontal-slotted plenum shall be connected to a fan. When activated, the fan shall push air through the horizontal slot, producing a horizontal air curtain above the copper converter that is directed to the exhaust hood. The fan power output installed shall be sufficient to overcome static pressure losses through the ductwork upstream of the horizontal-slotted plenum and across the plenum, and to deliver at least 22,370 watts (30 air horsepower) at the horizontal-slotted plenum discharge.

(vii) The exhaust hood shall be sized to completely intercept the airstream from the horizontal-slotted plenum combined with the additional airflow resulting from entrainment of the surrounding air. The exhaust hood shall be connected to a fan. When activated, the fan shall pull the combined airstream into the exhaust hood.

(viii) The entire secondary hood system shall be equipped with dampers and instrumentation, as appropriate, so that the desired air curtain and exhaust flow are maintained during each mode of copper converter operation.

(2) Optimize the capture of secondary inorganic arsenic emissions by operating the copper converter and secondary hood system at all times as follows:

(i) *Copper converter.* (A) Increase the air curtain and exhaust flow rates to

their optimum conditions prior to raising the primary hood and rolling the copper converter out for charging, skimming, or pouring.

(B) Once rolled out, prior to the commencement of skimming or pouring, hold the copper converter in an idle position until fuming from the molten bath has been minimized.

(C) During skimming, raise the receiving ladle off the ground and position the ladle as close to the copper converter mouth as possible to minimize the drop distance between the converter mouth and the receiving ladle.

(D) Control the rate of flow into the receiving ladle to the extent practicable to minimize fuming.

(E) Upon the completion of each charge, withdraw the charging ladle or vessel used from the confines of the secondary hood in a slow, deliberate manner.

(F) During charging, skimming, or pouring, ensure that the crane block does not disturb the air flow between the horizontal-slotted plenum and the exhaust hood.

(ii) *Secondary hood system.* (A) Operate the secondary hood system under conditions that will result in the maximum capture of inorganic arsenic emissions.

(B) Within 30 days after the effective date of this subpart, or within 30 days after the initial operation of each secondary hood system, whichever comes later, provide to the Administrator a list of operating conditions for the secondary hood system that will result in the maximum capture of inorganic arsenic emissions. This list shall specify the operating parameters for the following:

(1) The dimensions of the horizontal slot.

(2) The velocity of air through the horizontal slot during each mode of converter operation.

(3) The distance from the horizontal slot to the exhaust hood.

(4) The face velocity at the opening of the exhaust hood during each mode of converter operation.

(C) Operate the secondary hood system under the conditions listed in paragraph (b)(2)(ii)(B) of this section,

unless otherwise specified by the Administrator.

(D) Notify the Administrator in writing within 30 days if there is any change in the operating conditions submitted pursuant to the requirements of paragraph (b)(2)(ii)(B) that will result in any reduction in the maximum capture of inorganic arsenic emissions.

(3) Comply with the following inspection and maintenance requirements after installing the secondary hood system required in paragraph (b)(1) of this section:

(i) At least once every month, visually inspect the components of the secondary hood system that are exposed to potential damage from crane and ladle operation, including the hood enclosure, side- and back-wall hood seals, and the horizontal slot.

(ii) Replace or repair any defective or damaged components of the secondary hood system within 30 days after discovering the defective or damaged components.

(c) No owner or operator of a copper converter subject to the provisions of this subpart shall cause or allow to be discharged into the atmosphere any copper converter secondary emissions that exit from a control device and contain particulate matter in excess of 11.6 milligrams per dry standard cubic meter.

(d) The owner or operator of a copper converter subject to the provisions of this subpart shall submit a description of a plan for control of inorganic arsenic emissions from the copper converter and associated air pollution control equipment. This plan shall be submitted within 90 days after the effective date of this subpart, unless a waiver of compliance is granted under § 61.11. If a waiver of compliance is granted, the plan shall be submitted on a date set by the Administrator. Approval of the plan will be granted by the Administrator provided he finds that:

(1) It includes a systematic procedure for identifying malfunctions and for reporting them immediately to smelter supervisory personnel.

(2) It specifies the procedures that will be followed to ensure that equipment or process breakdowns due entirely or in part to poor maintenance

or other preventable conditions do not occur.

(3) It specifies the measures that will be taken to ensure compliance with paragraph (b)(2) of this section.

(e) The owner or operator shall implement the plan required under paragraph (d) of this section unless otherwise specified by the Administrator.

(f) At all times, including periods of startup, shutdown, and malfunction, the owner or operator of a copper converter subject to the provisions of this subpart shall operate and maintain the converter and associated air pollution control equipment in a manner consistent with good air pollution control practice for minimizing emissions of inorganic arsenic to the atmosphere to the maximum extent practicable. Determination of whether acceptable operating and maintenance procedures are being used will be based on information available to the Administrator, which may include, but is not limited to, monitoring results, review of operating and maintenance procedures, inspection of the source, and review of other records.

**§61.173 Compliance provisions.**

(a) The owner or operator of each copper converter to which §61.172(b)—(f) applies shall demonstrate compliance with the requirements of §61.172(b)(1) as follows:

(1) The owner or operator of each existing copper converter shall install a secondary hood system to meet the requirements of §61.172(b)(1) no later than 90 days after the effective date, unless a waiver of compliance has been approved by the Administrator in accordance with §61.11.

(2) The owner or operator of each new copper converter shall install a secondary hood system to meet the requirements of §61.172(b)(1) prior to the initial startup of the converter, except that if startup occurs prior to the effective date, the owner or operator shall meet the requirements of §61.172(b)(1) on the effective date.

**§61.174 Test methods and procedures.**

(a) To determine compliance with §61.172(c), the owner or operator shall conduct emission tests and reduce the test data in accordance with the test

methods and procedures contained in this section unless the Administrator:

(1) Specifies or approves, in specific cases, the use of a reference method with minor changes in methodology,

(2) Approves the use of an equivalent method,

(3) Approves the use of an alternative method, the results of which he has determined to be adequate for indicating whether a specific source is in compliance, or

(4) Waives the requirement for emission tests as provided in §61.13.

(b) The owner or operator shall conduct the emission tests required in paragraph (a) of this section:

(1) After achieving the optimum operating conditions submitted under §60.172(b)(2)(ii)(B) for the equipment required in §61.172(b)(1), but no later than 90 days after the effective date of this subpart in the case of an existing copper converter or a copper converter that has an initial startup date preceding the effective date, or

(2) After achieving the optimum operating conditions submitted under §60.172(b)(2)(ii)(B) for the equipment required in §61.172(b)(1), but no later than 90 days after startup in the case of a new copper converter, initial startup of which occurs after the effective date, or

(3) At such other times as may be required by the Administrator under section 114 of the Act.

(c) The owner or operator shall conduct each emission test under representative operating conditions and at sample locations subject to the Administrator's approval, and shall make available to the Administrator such records as may be necessary to determine the conditions of the emission test.

(d) For the purpose of determining compliance with §61.172(c), the owner or operator shall use reference methods in 40 CFR part 60, appendix A, as follows:

(1) Method 5 for the measurement of particulate matter,

(2) Method 1 for sample and velocity traverses,

(3) Method 2 for velocity and volumetric flow rate,

(4) Method 3 for gas analysis, and

(5) Method 4 for stack gas moisture.

(e) For Method 5, the sampling time for each run shall be at least 60 minutes and the minimum sampling volume shall be 0.85 dscm (30 dscf) except that smaller times or volumes when necessitated by process variables or other factors may be approved by the Administrator.

(f) For the purpose of determining applicability under §61.172(a), the owner or operator shall determine the converter arsenic charging rate as follows:

(1) Collect daily grab samples of copper matte and any lead matte charged to the copper converters.

(2) Each calendar month, from the daily grab samples collected under paragraph (f)(1) of this section, put together a composite copper matte sample and a composite lead matte sample. Analyze the composite samples individually using Method 108A, 108B, or 108C to determine the weight percent of inorganic arsenic contained in each sample.

(3) Calculate the converter arsenic charging rate once per month using the following equation:

$$R_c = \sum_{i=1}^n \frac{A_c W_{ci} + A_l W_{li}}{100 H_c}$$

Where:

R<sub>c</sub> is the converter arsenic charging rate (kg/h).

A<sub>c</sub> is the monthly average weight percent of arsenic in the copper matte charged during the month (%) as determined under paragraph (f)(2) of this section.

A<sub>l</sub> is the monthly average weight percent of arsenic in the lead matte charged during the month (%) as determined under paragraph (f)(2) of this section.

W<sub>ci</sub> is the total weight of copper matte charged to a copper converter during the month (kg).

W<sub>li</sub> is the total weight of lead matte charged to a copper converter during the month (kg).

H<sub>c</sub> is the total number of hours the copper converter department was in operation during the month (h).

n is the number of copper converters in operation during the month.

(4) Determine an annual arsenic charging rate for the copper converter department once per month by computing the arithmetic average of the 12 monthly converter arsenic charging rate values (R<sub>c</sub>) for the preceding 12-month period.

(g) An owner or operator may petition the Administrator for a modified sampling and analysis schedule if analyses performed for the first 12-month period after the effective date show the source to be considerably below the applicability limit prescribed in §61.172(a).

[51 FR 28029, Aug. 4, 1986, as amended at 55 FR 22027, May 31, 1990]

**§61.175 Monitoring requirements.**

(a) Each owner or operator of a source that is subject to the emission limit specified in §61.172(c) shall install, calibrate, maintain, and operate a continuous monitoring system for the measurement of the opacity of emissions discharged from the control device according to the following procedures:

(1) Ensure that each system is installed and operational no later than 90 days after the effective date of this subpart for a source that has an initial startup date preceding the effective date; and no later than 90 days after startup for other sources. Verification of the operational status shall, as a minimum, consist of an evaluation of the monitoring system in accordance with the requirements and procedures contained in Performance Specification 1 of appendix B of 40 CFR part 60.

(2) Comply with the provisions of §60.13(d) of 40 CFR part 60.

(3) Except for system breakdowns, repairs, calibration checks, and zero span adjustments, ensure that each continuous monitoring system is in continuous operation and meets frequency of operation requirements by completing a minimum of one cycle of sampling and analysis for each successive 10-second period and one cycle of data recording for each successive 6-minute period. Each data point shall represent the opacity measured for one cycle of sampling and analysis and shall be expressed as percent opacity.

(b) Except as required in paragraph (c) of this section, calculate 1-hour opacity averages from 360 or more consecutive data points equally spaced over each 1-hour period. Data recorded during periods of monitoring system breakdowns, repairs, calibration checks, and zero and span adjustments

shall not be included in the data averages computed under this paragraph.

(c) No later than 60 days after each continuous opacity monitoring system required in paragraph (a) of this section becomes operational, the owner or operator shall establish a reference opacity level for each monitored emission stream according to the following procedures:

(1) Conduct continuous opacity monitoring over a preplanned period of not less than 36 hours during which the processes and emission control equipment upstream of the monitoring system are operating under representative operating conditions subject to the Administrator's approval. This period shall include the time during which the emission test required by §61.13 is conducted.

(2) Calculate 6-minute averages of the opacity readings using 36 or more consecutive data points equally spaced over each 6-minute period.

(3) Calculate 1-hour average opacity values using 10 successive 6-minute average opacity values (i.e., calculate a new 1-hour average opacity value every 6 minutes). Determine the highest 1-hour average opacity value observed during the 36-hour preplanned test period.

(4) Calculate the reference opacity level by adding 5 percent opacity to the highest 1-hour average opacity calculated in paragraph (c)(3) of this section.

(d) The owner or operator may redetermine the reference opacity level for the copper converter secondary emission stream at the time of each emission test that demonstrates compliance with the emission limit required in §61.172(c) according to the provisions of paragraphs (c)(1) through (c)(4) of this section.

(e) With a minimum of 30 days prior notice, the Administrator may require the owner or operator to redetermine the reference opacity level for any monitored emission stream.

(f) Each owner or operator who is required to install the equipment specified in §61.172(b)(1) for the capture of secondary copper converter emissions shall install, calibrate, maintain, and operate a continuous monitoring device on each secondary hood system for

the measurement of the air flow through the horizontal-slotted plenum and through the exhaust hood. Each device shall be installed and operational no later than 90 days after the effective date of this subpart for a source that has an initial startup preceding the effective date; and no later than 90 days after startup for other sources.

(g) Each owner or operator subject to the requirements in paragraph (f) of this section shall establish for each secondary hood system reference air flow rates for the horizontal-slotted plenum and exhaust hood for each mode of converter operation. The reference flow rates shall be established when the equipment is operating under the optimum operating conditions required in §61.172(b)(2)(ii).

(h) Each owner or operator shall install the continuous monitoring systems and monitoring devices required in paragraphs (a) and (f) of this section in such a manner that representative measurements of emissions and process parameters are obtained.

#### **§61.176 Recordkeeping requirements.**

(a) Each owner or operator subject to the requirements of §61.172(b)(1) shall maintain at the source for a period of at least 2 years records of the visual inspections, maintenance, and repairs performed on each secondary hood system as required in §61.172(b)(3).

(b) Each owner or operator subject to the provisions of §61.172(c) shall maintain at the source for a period of at least 2 years and make available to the Administrator upon request a file of the following records:

(1) All measurements, including continuous monitoring for measurement of opacity;

(2) Records of emission test data and all calculations used to produce the required reports of emission estimates to demonstrate compliance with §61.172(c);

(3) All continuous monitoring system performance evaluations, including calibration checks and adjustments;

(4) The occurrence and duration of all startups, shutdowns, and malfunctions of the copper converters;

(5) All malfunctions of the air pollution control system;

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(6) All periods during which any continuous monitoring system or device is inoperative;

(7) All maintenance and repairs performed on each air pollution control system, continuous monitoring system, or monitoring device;

(8) All records of 1-hour average opacity levels for each separate control device; and

(9) For each secondary hood system:

(i) The reference flow rates for the horizontal-slotted plenum and exhaust hood for each converter operating mode established under § 61.175(g);

(ii) The actual flow rates; and

(iii) A daily log of the start time and duration of each converter operating mode.

(c) Each owner or operator subject to the provisions of this subpart shall maintain at the source for a period of at least 2 years and make available to the Administrator upon request the following records:

(1) For each copper converter, a daily record of the amount of copper matte and lead matte charged to the copper converter and the total hours of operation.

(2) For each copper converter department, a monthly record of the weight percent of arsenic contained in the copper matte and lead matte as determined under § 61.174(f).

(3) For each copper converter department, the monthly calculations of the average annual arsenic charging rate for the preceding 12-month period as determined under § 61.174(f).

**§ 61.177 Reporting requirements.**

(a) Each owner or operator subject to the provisions of § 61.172(c) shall:

(1) Provide the Administrator 30 days prior notice of the emission test required in § 61.174(a) to afford the Administrator the opportunity to have an observer present; and

(2) Submit to the Administrator a written report of the results of the emission test required in § 61.174(a) within 60 days after conducting the test.

(b) Each owner or operator subject to the provisions of § 61.175(a) shall provide the Administrator at least 30 days prior notice of each reference opacity level determination required in

§ 61.175(c) to afford the Administrator the opportunity to have an observer present.

(c) Each owner or operator subject to the provisions of § 61.175(a) shall submit to the Administrator:

(1) Within 60 days after conducting the evaluation required in § 61.175(a)(1), a written report of the continuous monitoring system evaluation;

(2) Within 30 days after establishing the reference opacity level required in § 61.175(c), a written report of the reference opacity level. The report shall also include the opacity data used and the calculations performed to determine the reference opacity level, and sufficient documentation to show that process and emission control equipment were operating normally during the reference opacity level determination; and

(3) A written report each quarter of each occurrence of excess opacity during the quarter. For purposes of this paragraph, an occurrence of excess opacity is any 1-hour period during which the average opacity, as measured by the continuous monitoring system, exceeds the reference opacity level established under § 61.175(c).

(d) The owner or operator subject to the provisions of § 61.175(g) shall submit to the Administrator:

(1) A written report of the reference air flow rate within 30 days after establishing the reference air flow rates required in § 61.175(g);

(2) A written report each quarter of all air flow rates monitored during the preceding 3-month period that are less than 80 percent of the corresponding reference flow rate established for each converter operating mode; and

(3) A written report each quarter of any changes in the operating conditions of the emission capture system, emission control device, or the building housing the converters that might increase fugitive emissions.

(e) All quarterly reports shall be postmarked by the 30th day following the end of each 3-month period and shall include the following information:

(1) The magnitude of each occurrence of excess opacity, any conversion factor(s) used, and the dates and times of commencement and completion of each

occurrence of excess opacity, the cause of each exceedance of the reference opacity level, and the measures taken to minimize emissions.

(2) The magnitude of each occurrence of reduced flow rate and the date and time of commencement and completion of each occurrence of reduced flow rate, the cause of the reduced flow rate, and the associated converter operating mode.

(3) Specific identification of each occurrence of excess opacity or reduced flow rate that occurs during startups, shutdowns, and malfunctions of the source.

(4) The date and time identifying each period during which the continuous monitoring system or monitoring device was inoperative, except for zero and span checks, and the nature of the system repairs or adjustments.

(5) Specific identification of each change in operating conditions of the emission capture system or control device, or in the condition of the building housing the converters.

(f) Each owner or operator of a source subject to the provisions of this subpart shall submit annually a written report to the Administrator that includes the monthly computations of the average annual converter arsenic charging rate as calculated under §61.174(f)(4). The annual report shall be postmarked by the 30th day following the end of each calendar year.

#### Subpart P—National Emission Standard for Inorganic Arsenic Emissions From Arsenic Trioxide and Metallic Arsenic Production Facilities

SOURCE: 51 FR 28033, Aug. 4, 1986, unless otherwise noted.

##### §61.180 Applicability and designation of sources.

The provisions of this subpart are applicable to each metallic arsenic production plant and to each arsenic trioxide plant that processes low-grade arsenic bearing materials by a roasting condensation process.

##### §61.181 Definitions.

All terms used in this subpart shall have the meanings given them in the

Act, in subpart A of part 61, and in this section as follows:

*Arsenic kitchen* means a baffled brick chamber where inorganic arsenic vapors are cooled, condensed, and removed in a solid form.

*Control device* means the air pollution control equipment used to collect particulate matter emissions.

*Curtail* means to cease operations to the extent technically feasible to reduce emissions.

*Inorganic arsenic* means the oxides and other noncarbon compounds of the element arsenic included in particulate matter, vapors, and aerosols.

*Malfunction* means any sudden failure of air pollution control equipment or process equipment or of a process to operate in a normal or usual manner so that emissions of inorganic arsenic are increased.

*Opacity* means the degree to which emissions reduce the transmission of light.

*Primary emission control system* means the hoods, enclosures, ducts, and control devices used to capture, convey, and remove particulate matter from exhaust gases which are captured directly at the source of generation.

*Process emissions* means inorganic arsenic emissions that are captured and collected in a primary emission control system.

*Roasting* means the use of a furnace to heat arsenic plant feed material for the purpose of eliminating a significant portion of the volatile materials contained in the feed.

*Secondary emissions* means inorganic arsenic emissions that escape capture by a primary emission control system.

*Shutdown* means the cessation of operation of a stationary source for any purpose.

[51 FR 28033, Aug. 4, 1986; 51 FR 35355, Oct. 3, 1986]

##### §61.182 Standard for new and existing sources.

(a) Within 30 days after the effective date of this subpart, the owner or operator of each source to which this subpart applies shall identify and submit to the Administrator a list of potential sources (equipment and operations) of inorganic arsenic emissions.

(b) The owner or operator shall submit a description of an inspection, maintenance, and housekeeping plan for control of inorganic arsenic emissions from the potential sources identified under paragraph (a) of this section. This plan shall be submitted within 90 days after the effective date of this subpart, unless a waiver of compliance is granted under §61.11. If a waiver of compliance is granted, the plan shall be submitted on a date set by the Administrator. Approval of the plan will be granted by the Administrator provided he finds that:

(1) It achieves the following objectives in a manner that does not cause adverse impacts in other environmental media:

(i) Clean-up and proper disposal, wet-down, or chemical stabilization to the extent practicable (considering access and safety) of any dry, dusty material having an inorganic arsenic content greater than 2 percent that accumulates on any surface within the plant boundaries outside of a dust-tight enclosure.

(ii) Immediate clean-up and proper disposal, wet-down, or chemical stabilization of spills of all dry, dusty material having an inorganic arsenic content greater than 2 percent.

(iii) Minimization of emissions of inorganic arsenic to the atmosphere during removal of inorganic arsenic from the arsenic kitchen and from flue pulling operations by properly handling, wetting down, or chemically stabilizing all dusts and materials handled in these operations.

(2) It includes an inspection program that requires all process, conveying, and air pollution control equipment to be inspected at least once per shift to ensure that the equipment is being properly operated and maintained. The program will specify the evaluation criteria and will use a standardized checklist, which will be included as part of the plan required in paragraph (b) of this section, to document the inspection, maintenance, and housekeeping status of the equipment and that the objectives of paragraph (b)(1) of this section are being achieved.

(3) It includes a systematic procedure for identifying malfunctions and for re-

porting them immediately to supervisory personnel.

(4) It specifies the procedures that will be followed to ensure that equipment or process malfunctions due entirely or in part to poor maintenance or other preventable conditions do not occur.

(5) It includes a program for curtailing all operations necessary to minimize any increase in emissions of inorganic arsenic to the atmosphere resulting from a malfunction. The program will describe:

(i) The specific steps that will be taken to curtail each operation as soon as technically feasible after the malfunction is discovered.

(ii) The minimum time required to curtail each operation.

(iii) The procedures that will be used to ensure that the curtailment continues until after the malfunction is corrected.

(c) The owner or operator shall implement the plan required in paragraph (b) of this section until otherwise specified by the Administrator.

(d) At all times, including periods of startup, shutdown, and malfunction, the owner or operator of each source to which this subpart applies shall operate and maintain the source including associated air pollution control equipment in a manner consistent with good air pollution control practice for minimizing emissions of inorganic arsenic to the atmosphere to the maximum extent practicable. Determination of whether acceptable operating and maintenance procedures are being used will be based on information available to the Administrator, which may include, but is not limited to, monitoring results, review of operating and maintenance procedures, inspection of the source, and review of other records.

#### **§61.183 Emission monitoring.**

(a) The owner or operator of each source subject to the provisions of this subpart shall install, calibrate, maintain, and operate a continuous monitoring system for the measurement of the opacity of each arsenic trioxide and metallic arsenic process emission stream that exits from a control device.

(b) The owner or operator shall install, operate, and maintain each continuous monitoring system for the measurement of opacity required in paragraph (a) of this section according to the following procedures:

(1) Ensure that each system is installed and operational no later than 90 days after the effective date of this subpart for an existing source or a new source that has an initial startup date preceding the effective date. For a new source whose initial startup occurs after the effective date of this subpart, ensure that the system is installed and operational no later than 90 days after startup. Verification of the operational status shall, as a minimum, consist of an evaluation of the monitoring system in accordance with the requirements and procedures contained in Performance Specification 1 of appendix B of 40 CFR part 60.

(2) Comply with the provisions of §60.13(d) of 40 CFR part 60.

(3) Except for system breakdowns, repairs, calibration checks, and zero and span adjustments required under §60.13(d), ensure that each continuous monitoring system is in continuous operation and meets frequency of operation requirements by completing a minimum of one cycle of sampling and analysis for each successive 10-second period and one cycle of data recording for each successive 6-minute period. Each data point shall represent the opacity measured for one cycle of sampling and analysis and shall be expressed as percent opacity.

(c) The owner or operator shall calculate 6-minute opacity averages from 36 or more consecutive data points equally spaced over each 6-minute period. Data recorded during periods of monitoring system breakdowns, repairs, calibration checks, and zero and span adjustments shall not be included in the data averages computed under this paragraph.

(d) No later than 60 days after each continuous opacity monitoring system required in paragraph (a) of this section becomes operational, the owner or operator shall establish a reference opacity level for each monitored emission stream according to the following procedures:

(1) Conduct continuous opacity monitoring over a preplanned period of not less than 36 hours during which the processes and emission control equipment upstream of the monitoring system are operating in a manner that will minimize opacity under representative operating conditions subject to the Administrator's approval.

(2) Calculate 6-minute averages of the opacity readings using 36 or more consecutive data points equally spaced over each 6-minute period.

(3) Establish the reference opacity level by determining the highest 6-minute average opacity calculated under paragraph (d)(2) of this section.

(e) With a minimum of 30 days prior notice, the Administrator may require an owner or operator to redetermine the reference opacity level for any monitored emission stream.

(f) Each owner or operator shall install all continuous monitoring systems or monitoring devices required in paragraph (a) of this section in such a manner that representative measurements of emissions or process parameters are obtained.

**§61.184 Ambient air monitoring for inorganic arsenic.**

(a) The owner or operator of each source to which this subpart applies shall operate a continuous monitoring system for the measurement of inorganic arsenic concentrations in the ambient air.

(b) The ambient air monitors shall be located at sites to detect maximum concentrations of inorganic arsenic in the ambient air in accordance with a plan approved by the Administrator that shall include the sampling and analytical method used.

(c) The owner or operator shall submit a written plan describing, and explaining the basis for, the design and adequacy of the monitoring network, sampling and analytical procedures, and quality assurance within 45 days after the effective date of this subpart.

(d) Each monitor shall be operated continuously except for a reasonable time allowance for instrument maintenance and calibration, for changing filters, or for replacement of equipment needing major repair.

(e) Filters shall be changed daily and shall be analyzed and concentrations calculated within 30 days after filters are collected.

(f) The Administrator at any time may require changes in, or expansion of, the sampling program, including sampling and analytical protocols and network design.

**§ 61.185 Recordkeeping requirements.**

(a) Each owner or operator of a source subject to the provisions of this subpart shall maintain at the source for a period of at least 2 years the following records: All measurements, including continuous monitoring for measurement of opacity; all continuous monitoring system performance evaluations, including calibration checks and adjustments; all periods during which the continuous monitoring system or monitoring device is inoperative; and all maintenance and repairs made to the continuous monitoring system or monitoring device.

(b) Each owner or operator shall maintain at the source for a period of at least 2 years a log for each plant department in which the operating status of process, conveying, and emission control equipment is described for each shift. For malfunctions and upsets, the following information shall be recorded in the log:

- (1) The time of discovery.
- (2) A description of the malfunction or upset.
- (3) The time corrective action was initiated.
- (4) A description of corrective action taken.
- (5) The time corrective action was completed.
- (6) A description of steps taken to reduce emissions of inorganic arsenic to the atmosphere between the time of discovery and the time corrective action was taken.

(c) Each owner or operator subject to the provisions of this subpart shall maintain for a period of at least 2 years records of 6-minute average opacity levels for each separate control device.

(d) Each owner or operator subject to the provisions of § 61.186 shall maintain for a period of at least 2 years records of ambient inorganic arsenic concentrations at all sampling sites and

other data needed to determine such concentrations.

**§ 61.186 Reporting requirements.**

(a) Each owner or operator subject to the provisions of § 61.183(a) shall provide the Administrator at least 30 days prior notice of each reference opacity level determination required in § 61.183(a) to afford the Administrator the opportunity to have an observer present.

(b) Each owner or operator subject to the provisions of § 61.183(a) shall submit to the Administrator:

(1) Within 60 days of conducting the evaluation required in § 61.183(b)(1), a written report of the continuous monitoring system evaluation;

(2) Within 30 days of establishing the reference opacity level required in § 61.183(d), a written report of the reference opacity level. The report shall also include the opacity data used and the calculations performed to determine the reference opacity level, and sufficient documentation to show that process and emission control equipment were operating normally during the reference opacity level determination; and

(3) A written report each quarter of each occurrence of excess opacity during the quarter. For the purposes of this paragraph, an occurrence of excess opacity is any 6-minute period during which the average opacity, as measured by the continuous monitoring system, exceeds the reference opacity level established under § 61.183(d).

(c) All quarterly reports of excess opacity shall be postmarked by the 30th day following the end of each quarter and shall include the following information:

(1) The magnitude of excess opacity, any conversion factor(s) used, and the dates and times of commencement and completion of each occurrence of excess opacity, the cause of each exceedance of the reference opacity level, and the measures taken to minimize emissions.

(2) Specific identification of each period of excess opacity that occurred during startups, shutdowns, and malfunctions of the source.

(3) The date and time identifying each period during which the continuous monitoring system or monitoring device was inoperative, except for zero and span checks, and the nature of the system repairs or adjustments.

(d) Each owner or operator subject to this subpart shall submit a written report semiannually to the Administrator that describes the status and results, for the reporting period, of any pilot plant studies on alternative arsenic trioxide production processes. Conclusions and recommendations of the studies shall also be reported.

(e) All semiannual progress reports required in paragraph (d) of this section shall be postmarked by the 30th day following the end of each 6-month period.

(f) Each owner or operator of a source to which this subpart applies shall submit a written report each quarter to the Administrator that includes the following information:

(1) All ambient inorganic arsenic concentrations measured at all monitoring sites in accordance with §61.184.

(2) A description of any modifications to the sampling network, during the reporting period, including any major maintenance, site changes, calibrations, and quality assurance information including sampling and analytical precision and accuracy estimates.

(g) All quarterly reports required in paragraph (f) of this section shall be postmarked by the 30th day following the end of each quarter.

#### Subpart Q—National Emission Standards for Radon Emissions From Department of Energy Facilities

SOURCE: 54 FR 51701, Dec. 15, 1989, unless otherwise noted.

##### §61.190 Designation of facilities.

The provisions of this subpart apply to the design and operation of all storage and disposal facilities for radium-containing material (i.e., byproduct material as defined under section 11.e(2) of the Atomic Energy Act of 1954 (as amended)) that are owned or operated by the Department of Energy that emit radon-222 into air, including these

facilities: The Feed Materials Production Center, Fernald, Ohio; the Niagara Falls Storage Site, Lewiston, New York; the Weldon Spring Site, Weldon Spring, Missouri; the Middlesex Sampling Plant, Middlesex, New Jersey; the Monticello Uranium Mill Tailings Pile, Monticello, Utah. This subpart does not apply to facilities listed in, or designated by the Secretary of Energy under title I of the Uranium Mill Tailings Control Act of 1978.

##### §61.191 Definitions.

As used in this subpart, all terms not defined here have the meaning given them in the Clean Air Act or subpart A of part 61. The following terms shall have the following specific meanings:

(a) *Facility* means all buildings, structures and operations on one contiguous site.

(b) *Source* means any building, structure, pile, impoundment or area used for interim storage or disposal that is or contains waste material containing radium in sufficient concentration to emit radon-222 in excess of this standard prior to remedial action.

##### §61.192 Standard.

No source at a Department of Energy facility shall emit more than 20 pCi/m<sup>2</sup>-s of radon-222 as an average for the entire source, into the air. This requirement will be part of any Federal Facilities Agreement reached between Environmental Protection Agency and Department of Energy.

##### §61.193 Exemption from the reporting and testing requirements of 40 CFR 61.10.

All facilities designated under this subpart are exempt from the reporting requirements of 40 CFR 61.10.

#### Subpart R—National Emission Standards for Radon Emissions From Phosphogypsum Stacks

SOURCE: 57 FR 23317, June 3, 1992, unless otherwise noted.

##### §61.200 Designation of facilities.

The provisions of this subpart apply to each owner or operator of a phosphogypsum stack, and to each person who

owns, sells, distributes, or otherwise uses any quantity of phosphogypsum which is produced as a result of wet acid phosphorus production or is removed from any existing phosphogypsum stack.

**§ 61.201 Definitions.**

As used in this subpart, all terms not defined here have the meaning given them in the Clean Air Act or subpart A of part 61. The following terms shall have the following specific meanings:

(a) *Inactive stack* means a stack to which no further routine additions of phosphogypsum will be made and which is no longer used for water management associated with the production of phosphogypsum. If a stack has not been used for either purpose for two years, it is presumed to be inactive.

(b) *Phosphogypsum* is the solid waste byproduct which results from the process of wet acid phosphorus production.

(c) *Phosphogypsum stacks or stacks* are piles of waste resulting from wet acid phosphorus production, including phosphate mines or other sites that are used for the disposal of phosphogypsum.

**§ 61.202 Standard.**

Each person who generates phosphogypsum shall place all phosphogypsum in stacks. Phosphogypsum may be removed from a phosphogypsum stack only as expressly provided by this subpart. After a phosphogypsum stack has become an inactive stack, the owner or operator shall assure that the stack does not emit more than 20 pCi/m<sup>2</sup>-s of radon-222 into the air.

**§ 61.203 Radon monitoring and compliance procedures.**

(a) Within sixty days following the date on which a stack becomes an inactive stack, or within ninety days after the date on which this subpart first took effect if a stack was already inactive on that date, each owner or operator of an inactive phosphogypsum stack shall test the stack for radon-222 flux in accordance with the procedures described in 40 CFR part 61, appendix B, Method 115. EPA shall be notified at least 30 days prior to each such emissions test so that EPA may, at its op-

tion, observe the test. If meteorological conditions are such that a test cannot be properly conducted, then the owner or operator shall notify EPA and test as soon as conditions permit.

(b)(1) Within ninety days after the testing is required, the owner or operator shall provide EPA with a report detailing the actions taken and the results of the radon-222 flux testing. Each report shall also include the following information:

(i) The name and location of the facility;

(ii) A list of the stacks at the facility including the size and dimensions of each stack;

(iii) The name of the person responsible for the operation of the facility and the name of the person preparing the report (if different);

(iv) A description of the control measures taken to decrease the radon flux from the source and any actions taken to insure the long term effectiveness of the control measures; and

(v) The results of the testing conducted, including the results of each measurement.

(2) Each report shall be signed and dated by a corporate officer in charge of the facility and contain the following declaration immediately above the signature line: "I certify under penalty of law that I have personally examined and am familiar with the information submitted herein and based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment. See, 18 U.S.C. 1001."

(c) If the owner or operator of an inactive stack chooses to conduct measurements over a one year period as permitted by Method 115 in appendix B to part 61, within ninety days after the testing commences the owner or operator shall provide EPA with an initial report, including the results of the first measurement period and a schedule for all subsequent measurements. An additional report containing all the information in § 61.203(b) shall be submitted within ninety days after completion of the final measurements.

(d) If at any point an owner or operator of a stack once again uses an inactive stack for the disposal of phosphogypsum or for water management, the stack ceases to be in inactive status and the owner or operator must notify EPA in writing within 45 days. When the owner or operator ceases to use the stack for disposal of phosphogypsum or water management, the stack will once again become inactive and the owner or operator must satisfy again all testing and reporting requirements for inactive stacks.

(e) If an owner or operator removes phosphogypsum from an inactive stack, the owner shall test the stack in accordance with the procedures described in 40 CFR part 61, appendix B, Method 115. The stack shall be tested within ninety days of the date that the owner or operator first removes phosphogypsum from the stack, and the test shall be repeated at least once during each calendar year that the owner or operator removes additional phosphogypsum from the stack. EPA shall be notified at least 30 days prior to an emissions test so that EPA may, at its option, observe the test. If meteorological conditions are such that a test cannot be properly conducted, then the owner shall notify EPA and test as soon as conditions permit. Within ninety days after completion of a test, the owner or operator shall provide EPA with a report detailing the actions taken and the results of the radon-222 flux testing. Each such report shall include all of the information specified by §61.203(b).

**§61.204 Distribution and use of phosphogypsum for agricultural purposes.**

Phosphogypsum may be lawfully removed from a stack and distributed in commerce for use in agriculture if each of the following requirements is satisfied:

(a) The owner or operator of the stack from which the phosphogypsum is removed shall determine annually the average radium-226 concentration at the location in the stack from which the phosphogypsum will be removed, as provided by §61.207.

(b) The average radium-226 concentration at the location in the stack

from which the phosphogypsum will be removed, as determined pursuant to §61.207, shall not exceed 10 picocuries per gram (pCi/g).

(c) All phosphogypsum distributed in commerce for use in agriculture by the owner or operator of a phosphogypsum stack shall be accompanied by a certification document which conforms to the requirements of §61.208(a).

(d) Each distributor, retailer, or reseller who distributes phosphogypsum for use in agriculture shall prepare certification documents which conform to the requirements of §61.208(b).

**§61.205 Distribution and use of phosphogypsum for research and development.**

(a) Phosphogypsum may be lawfully removed from a stack and distributed in commerce for use in research and development activities if each of the following requirements is satisfied:

(1) The owner or operator of the stack from which the phosphogypsum is removed shall determine annually the average radium-226 concentration at the location in the stack from which the phosphogypsum will be removed, as provided by §61.207.

(2) All phosphogypsum distributed in commerce for use in research or development by the owner or operator of a phosphogypsum stack or by a distributor, retailer, or reseller shall be accompanied at all times by certification documents which conform to the requirements of §61.208.

(b) Phosphogypsum may be purchased and used for research and development purposes if the following requirements are satisfied:

(1) Each quantity of phosphogypsum purchased by a facility for a particular research and development activity shall be accompanied by certification documents which conform to the requirements of §61.208.

(2) No facility shall purchase or possess more than 700 pounds of phosphogypsum for a particular research and development activity.

(3) Containers of phosphogypsum used in research and development activities shall be labeled with the following warning:

Caution: Phosphogypsum Contains Elevated Levels of Naturally Occurring Radioactivity

(4) For each research and development activity in which phosphogypsum is used, the facility shall maintain records which conform to the requirements of § 61.209(c).

(c) Phosphogypsum not intended for distribution in commerce may be lawfully removed from a stack by an owner or operator to perform laboratory analyses required by this subpart or any other quality control or quality assurance analyses associated with wet acid phosphorus production.

**§ 61.206 Distribution and use of phosphogypsum for other purposes.**

(a) Phosphogypsum may not be lawfully removed from a stack and distributed or used for any purpose not expressly specified in § 61.204 or § 61.205 without prior EPA approval.

(b) A request that EPA approve distribution and/or use of phosphogypsum for any other purpose must be submitted in writing and must contain the following information:

(1) The name and address of the person(s) making the request.

(2) A description of the proposed use, including any handling and processing that the phosphogypsum will undergo.

(3) The location of each facility, including suite and/or building number, street, city, county, state, and zip code, where any use, handling, or processing of the phosphogypsum will take place.

(4) The mailing address of each facility where any use, handling, or processing of the phosphogypsum will take place, if different from paragraph (b)(3) of this section.

(5) The quantity of phosphogypsum to be used by each facility.

(6) The average concentration of radium-226 in the phosphogypsum to be used.

(7) A description of any measures which will be taken to prevent the uncontrolled release of phosphogypsum into the environment.

(8) An estimate of the maximum individual risk, risk distribution, and incidence associated with the proposed use, including the ultimate disposition of the phosphogypsum or any product in which the phosphogypsum is incorporated.

(9) A description of the intended disposition of any unused phosphogypsum.

(10) Each request shall be signed and dated by a corporate officer or public official in charge of the facility.

(c) The Assistant Administrator for Air and Radiation may decide to grant a request that EPA approve distribution and/or use of phosphogypsum if he determines that the proposed distribution and/or use is at least as protective of public health, in both the short term and the long term, as disposal of phosphogypsum in a stack or a mine.

(d) If the Assistant Administrator for Air and Radiation decides to grant a request that EPA approve distribution and/or use of phosphogypsum for a specified purpose, each of the following requirements shall be satisfied:

(1) The owner or operator of the stack from which the phosphogypsum is removed shall determine annually the average radium-226 concentration at the location in the stack from which the phosphogypsum will be removed, as provided by § 61.207.

(2) All phosphogypsum distributed in commerce by the owner or operator of a phosphogypsum stack, or by a distributor, retailer, or reseller, or purchased by the end-user, shall be accompanied at all times by certification documents which conform to the requirements § 61.208.

(3) The end-user of the phosphogypsum shall maintain records which conform to the requirements of § 61.209(c).

(e) If the Assistant Administrator for Air and Radiation decides to grant a request that EPA approve distribution and/or use of phosphogypsum for a specified purpose, the Assistant Administrator may decide to impose additional terms or conditions governing such distribution or use. In appropriate circumstances, the Assistant Administrator may also decide to waive or modify the recordkeeping requirements established by § 61.209(c).

**§ 61.207 Radium-226 sampling and measurement procedures.**

(a) Before removing phosphogypsum from a stack for distribution to commerce pursuant to § 61.204, § 61.205, or § 61.206, the owner or operator of a phosphogypsum stack shall measure the average radium-226 concentration

at the location in the stack from which phosphogypsum will be removed. Measurements shall be performed for each such location prior to the initial distribution in commerce of phosphogypsum removed from that location and at least once during each calendar year while distribution of phosphogypsum removed from the location continues.

(b) The radium-226 concentration shall be determined in accordance with the analytical procedures described in 40 CFR part 61, appendix B, Method 114.

(c) Phosphogypsum samples shall be taken at regularly spaced intervals across the surface of the location in the phosphogypsum stack from which phosphogypsum will be removed.

(d) The minimum number of samples considered necessary to determine a representative average radium-226 concentration for the location on the stack to be analyzed shall be calculated as follows:

(1) Obtain the measured mean and standard deviation of 30 regularly spaced phosphogypsum samples.

(2) Solve the following equation for the number of samples required to achieve a 95% confidence interval:

$$e \geq \frac{\tau(n)s}{x\sqrt{n}}$$

where:

$\tau$  is the students- $\tau$  distribution,

$s$  = measured standard deviation of the radium-226 concentration,

$x$  = measured mean of the radium-226 concentration,

$e$  = allowable error (expressed as a fraction), and

$n$  = number of samples.

See Reference 1 of Method 115 in appendix B to part 61 for a detailed discussion of this statistical technique.

(3) If the number of samples required is greater than 30, then obtain and analyze the necessary number of additional samples and recalculate the average radium-226 concentration using the combination of the results of the original 30 samples and additional samples. The additional samples shall also be regularly spaced across the surface of the location in the phosphogypsum stack from which phosphogypsum will be removed.

#### § 61.208 Certification requirements.

(a)(1) The owner or operator of a stack from which phosphogypsum will be removed and distributed in commerce pursuant to § 61.204, § 61.205, or § 61.206 shall prepare a certification document for each quantity of phosphogypsum which is distributed in commerce which includes:

(i) The name and address of the owner or operator;

(ii) The name and address of the purchaser or recipient of the phosphogypsum;

(iii) The quantity (in pounds) of phosphogypsum sold or transferred;

(iv) The date of sale or transfer;

(v) A description of the intended end-use for the phosphogypsum;

(vi) The average radium-226 concentration, in pCi/g, of the phosphogypsum, as determined pursuant to § 61.207; and

(vii) The signature of the person who prepared the certification.

(2) The owner or operator shall retain the certification document for five years from the date of sale or transfer, and shall produce the document for inspection upon request by the Administrator, or his authorized representative. The owner or operator shall also provide a copy of the certification document to the purchaser or recipient.

(b)(1) Each distributor, retailer, or reseller who purchases or receives phosphogypsum for subsequent resale or transfer shall prepare a certification document for each quantity of phosphogypsum which is resold or transferred which includes:

(i) The name and address of the distributor, retailer, or reseller;

(ii) The name and address of the purchaser or recipient of the phosphogypsum;

(iii) The quantity (in pounds) of phosphogypsum resold or transferred;

(iv) The date of resale or transfer;

(v) A description of the intended end-use for the phosphogypsum;

(vi) A copy of each certification document which accompanied the phosphogypsum at the time it was purchased or received by the distributor, retailer, or reseller; and

(vii) The signature of the person who prepared the certification.

(2) The distributor, retailer, or reseller shall retain the certification document for five years from the date of resale or transfer, and shall produce the document for inspection upon request by the Administrator, or his authorized representative. For every resale or transfer of phosphogypsum to a person other than an agricultural end-user, the distributor, retailer, or reseller shall also provide a copy of the certification document to the purchaser or transferee.

**§ 61.209 Required records.**

(a) Each owner or operator of a phosphogypsum stack must maintain records for each stack documenting the procedure used to verify compliance with the flux standard in § 61.202, including all measurements, calculations, and analytical methods on which input parameters were based. The required documentation shall be sufficient to allow an independent auditor to verify the correctness of the determination made concerning compliance of the stack with flux standard.

(b) Each owner or operator of a phosphogypsum stack must maintain records documenting the procedure used to determine average radium-226 concentration pursuant to § 61.207, including all measurements, calculations, and analytical methods on which input parameters were based. The required documentation shall be sufficient to allow an independent auditor to verify the accuracy of the radium-226 concentration.

(c) Each facility which uses phosphogypsum pursuant to § 61.205 or § 61.206 shall prepare records which include the following information:

(1) The name and address of the person in charge of the activity involving use of phosphogypsum.

(2) A description of each use of phosphogypsum, including the handling and processing that the phosphogypsum underwent.

(3) The location of each site where each use of phosphogypsum occurred, including the suite and/or building number, street, city, county, state, and zip code.

(4) The mailing address of each facility using phosphogypsum, if different from paragraph (c)(3) of this section.

(5) The date of each use of phosphogypsum.

(6) The quantity of phosphogypsum used.

(7) The certified average concentration of radium-226 for the phosphogypsum which was used.

(8) A description of all measures taken to prevent the uncontrolled release of phosphogypsum into the environment.

(9) A description of the disposition of any unused phosphogypsum.

(d) These records shall be retained by the facility for at least five years from the date of use of the phosphogypsum and shall be produced for inspection upon request by the Administrator, or his authorized representative.

**§ 61.210 Exemption from the reporting and testing requirements of 40 CFR 61.10.**

All facilities designated under this subpart are exempt from the reporting requirements of 40 CFR 61.10.

**Subpart S—[Reserved]**

**Subpart T—National Emission Standards for Radon Emissions From the Disposal of Uranium Mill Tailings**

SOURCE: 54 FR 51702, Dec. 15, 1989, unless otherwise noted.

**§ 61.220 Designation of facilities.**

(a) The provisions of this subpart apply to owners and operators of all sites that are used for the disposal of tailings, and that managed residual radioactive material during and following the processing of uranium ores, commonly referred to as uranium mills and their associated tailings, that are listed in, or designated by the Secretary of Energy under title I of the Uranium Mill Tailings Radiation Control Act of 1978, except § 61.226 of this subpart which applies to owners and operators of all sites that are regulated under title II of the Uranium Mill Tailings Radiation Control Act of 1978.

(b) [Reserved]

[59 FR 36301, July 15, 1994]

**§ 61.221 Definitions.**

As used in this subpart, all terms not defined here have the meanings given them in the Clean Air Act or subpart A of part 61. The following terms shall have the following specific meanings:

(a) *Long term stabilization* means the addition of material on a uranium mill tailings pile for the purpose of ensuring compliance with the requirements of 40 CFR 192.02(a). These actions shall be considered complete when the Nuclear Regulatory Commission determines that the requirements of 40 CFR 192.02(a) have been met.

(b) *Operational* means a uranium mill tailings pile that is licensed to accept additional tailings, and those tailings can be added without violating subpart W or any other Federal, state or local rule or law. A pile cannot be considered operational if it is filled to capacity or the mill it accepts tailings from has been dismantled or otherwise decommissioned.

(c) *Residual radioactive materials* shall have the same meaning as in section 101(7) of the Uranium Mill Tailings Radiation Control Act of 1978, 42 U.S.C. 7911(7).

(d) *Tailings* shall have the same meaning as in section 101(8) of the Uranium Mill Tailings Radiation Control Act of 1978, 42 U.S.C. 7911(8).

(e) *In significant part* means in a manner that is not reasonably expected to materially (i.e., more than de minimis) interfere with compliance with the 20 pCi/m<sup>2</sup>-s flux standard as expeditiously as practicable considering technological feasibility (including factors beyond the control of the licensee).

[54 FR 51702, Dec. 15, 1989, as amended at 59 FR 36301, July 15, 1994]

**§ 61.222 Standard.**

(a) Radon-222 emissions to the ambient air from uranium mill tailings pile that are no longer operational shall not exceed 20 pCi/m<sup>2</sup>-s of radon-222.

(b) Once a uranium mill tailings pile or impoundment ceases to be operational it must be disposed of and brought into compliance with this standard within two years of the effective date of the standard. If it is not physically possible for an owner or operator to complete disposal within that

time, EPA shall, after consultation with the owner or operator, establish a compliance agreement which will assure that disposal will be completed as quickly as possible.

[54 FR 51702, Dec. 15, 1989, as amended at 59 FR 36301, July 15, 1994]

**§ 61.223 Compliance procedures.**

(a) Sixty days following the completion of covering the pile to limit radon emissions but prior to the long term stabilization of the pile, the owners or operators of uranium mill tailings shall conduct testing for all piles within the facility in accordance with the procedures described in 40 CFR part 61, appendix B, Method 115, or other procedures for which EPA has granted prior approval.

(b) Ninety days after the testing is required, each facility shall provide EPA with a report detailing the actions taken and the results of the radon-222 flux testing. EPA shall be notified at least 30 days prior to an emission test so that EPA may, at its option, observe the test. If meteorological conditions are such that a test cannot be properly conducted, then the owner or operator shall notify EPA and test as soon as conditions permit. Each report shall also include the following information:

(1) The name and location of the facility.

(2) A list of the piles at the facility.

(3) A description of the control measures taken to decrease the radon flux from the source and any actions taken to insure the long term effectiveness of the control measures.

(4) The results of the testing conducted, including the results of each measurement.

(5) Each report shall be signed and dated by a public official in charge of the facility and contain the following declaration immediately above the signature line:

I certify under penalty of law that I have personally examined and am familiar with the information submitted herein and based on my inquiry of those individuals immediately responsible for obtaining the information. I believe that the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information including the

possibility of fine and imprisonment. See 18 U.S.C. 1001.

(c) If year long measurements are made in accordance with Method 115 of appendix B of part 61, this report shall include the results of the first measurement period and provide a schedule for the measurement frequency to be used. An additional report shall be submitted ninety days after completion of the final measurements.

(d) If long term stabilization has begun before the effective date of the rule then testing may be conducted at any time, up to 60 days after the long term stabilization is completed.

(e) If the testing demonstrates that the pile meets the requirement of § 61.222(a) and long term stabilization has been completed then the pile is considered disposed for purposes of this rule.

[54 FR 51702, Dec. 15, 1989, as amended at 59 FR 36302, July 15, 1994]

**§ 61.224 Recordkeeping requirements.**

The owner or operator must maintain records documenting the source of input parameters including the results of all measurements upon which they are based, the calculations and/or analytical methods used to derive values for input parameters, and the procedure used to determine compliance. This documentation should be sufficient to allow an independent auditor to verify the accuracy of the determination made concerning the facility's compliance with the standard. The Administrator shall be kept apprised of the location of these records and the records must be kept for at least five years and upon request be made available for inspection by the Administrator, or his authorized representative.

**§ 61.225 Exemption from the reporting and testing requirements of 40 CFR 61.10.**

All facilities designated under this subpart are exempt from the reporting requirements of 40 CFR 61.10.

**§ 61.226 Reconsideration of rescission and reinstatement of this subpart.**

(a) *Reinstatement of this subpart upon completion of reconsideration of rescission.* (1) The Administrator shall rein-

state 40 CFR part 61, subpart T as applied to owners and operators of non-operational uranium mill tailings disposal sites that are licensed by the NRC or an affected Agreement State if the Administrator determines by rulemaking, based on the record, that NRC or an affected Agreement State has:

(i) Failed on a programmatic basis to implement and enforce, in significant part, the regulations governing the disposal of uranium mill tailings promulgated by EPA and NRC or the tailings closure plan (radon) (i.e., contained in the license) requirements establishing milestones for the purpose of emplacing a permanent radon barrier that will achieve compliance with the 20 pCi/m<sup>2</sup>-s flux standard; and

(ii) Those failures may reasonably be anticipated to significantly interfere (i.e., more than de minimis) with the timely emplacement of a permanent radon barrier constructed to achieve compliance with the 20 pCi/m<sup>2</sup>-s flux standard at the uranium mill tailings disposal site.

(2) The Administrator shall reinstate 40 CFR part 61, subpart T on a site-specific basis as applied to owners and operators of non-operational uranium mill tailings disposal sites that are licensed by the NRC or an affected Agreement State if the Administrator determines by rulemaking, based on the record:

(i) That NRC or an affected Agreement State has failed in significant part on a site-specific basis to achieve compliance by the operator of the site or sites with applicable license requirements, regulations, or standards implemented by NRC and the affected Agreement States; and

(ii) Those failures may reasonably be anticipated to significantly interfere (i.e., more than de minimis) with the timely emplacement of a permanent radon barrier constructed to achieve compliance with the 20 pCi/m<sup>2</sup>-s flux standard at the uranium mill tailings disposal site.

(3) Upon completion of the reconsideration of rescission pursuant to § 61.226(c) the Administrator may issue a finding that reinstatement of this subpart is not appropriate if the Administrator finds:

(i) NRC and the affected Agreement States are on a programmatic basis implementing and enforcing, in significant part, the regulations governing the disposal of uranium mill tailings promulgated by EPA and NRC or the tailings closure plan (radon) (i.e., contained in the license) requirements establishing milestones for the purpose of emplacing a permanent radon barrier that will achieve compliance with the 20 pCi/m<sup>2</sup>-s flux standard; or

(ii) NRC or an affected Agreement State are on a site-specific basis, in significant part, achieving compliance by the operator of the site or sites with applicable license requirements, regulations, or standards implemented by NRC and the affected Agreement States.

(b) *Procedures to petition for reconsideration of rescission of this subpart.* (1) A person may petition the Administrator to reconsider the rescission and seek reinstatement of this subpart under §61.226(a).

(2) EPA shall summarily dismiss a petition to reconsider rescission and seek reinstatement of this subpart under §61.226(a)(1) (programmatic basis), without prejudice, unless the petitioner demonstrates that written notice of the alleged failure(s) was provided to NRC at least 60 days before filing the petition with EPA. This notification shall include a statement of the grounds for such a petition and this notice requirement may be satisfied by, but is not limited to, submissions or pleadings submitted to NRC during a proceeding conducted by NRC.

(3) EPA shall summarily dismiss a petition to reconsider rescission and seek reinstatement of this subpart under §61.226(a)(2) (site-specific basis), without prejudice, unless the petitioner demonstrates that a written request was made to NRC or an affected Agreement State for enforcement or other relief at least 60 days before filing its petition with EPA, and unless the petitioner alleges that NRC or the affected Agreement State failed to respond to such request by taking action, as necessary, to assure timely implementation and enforcement of the 20 pCi/m<sup>2</sup>-s flux standard.

(4) Upon receipt of a petition under §61.226(b)(1) that is not dismissed under

§61.226(b)(2) or (b)(3), EPA will propose to grant or deny an authorized petition to reconsider, take comments on the Agency's proposed action, and take final action granting or denying such petition to reconsider within 300 days of receipt.

(c) *Reconsideration of rescission of this subpart initiated by the Administrator.* (1) The Administrator may initiate reconsideration of the rescission and reinstatement of this subpart as applied to owners and operators of non-operational uranium mill tailings disposal sites if EPA has reason to believe that NRC or an affected Agreement State has failed to implement and enforce, in significant part, the regulations governing the disposal of uranium mill tailings promulgated by EPA and NRC or the tailings closure plan (radon) requirements establishing milestones for the purpose of emplacing a permanent radon barrier that will achieve compliance with the 20 pCi/m<sup>2</sup>-s flux standard.

(2) Before the Administrator initiates reconsideration of the rescission and reinstatement of this subpart under §61.226(c)(1), EPA shall consult with NRC to address EPA's concerns and if the consultation does not resolve the concerns, EPA shall provide NRC with 60 days notice of the Agency's intent to initiate rulemaking to reinstate this subpart.

[59 FR 36302, July 15, 1994]

#### Subpart U—[Reserved]

#### Subpart V—National Emission Standard for Equipment Leaks (Fugitive Emission Sources)

SOURCE: 49 FR 23513, June 6, 1984, unless otherwise noted.

#### §61.240 Applicability and designation of sources.

(a) The provisions of this subpart apply to each of the following sources that are intended to operate in volatile hazardous air pollutant (VHAP) service: pumps, compressors, pressure relief devices, sampling connection systems, open-ended valves or lines, valves, flanges and other connectors, product

accumulator vessels, and control devices or systems required by this subpart.

(b) The provisions of this subpart apply to the sources listed in paragraph (a) after the date of promulgation of a specific subpart in part 61.

(c) While the provisions of this subpart are effective, a source to which this subpart applies that is also subject to the provisions of 40 CFR part 60 only will be required to comply with the provisions of this subpart.

#### § 61.241 Definitions.

As used in this subpart, all terms not defined herein shall have the meaning given them in the Act, in subpart A of part 61, or in specific subparts of part 61; and the following terms shall have specific meaning given them:

*Closed-vent system* means a system that is not open to atmosphere and that is composed of piping, connections, and, if necessary, flow-inducing devices that transport gas or vapor from a piece or pieces of equipment to a control device.

*Connector* means flanged, screwed, welded, or other joined fittings used to connect two pipe lines or a pipe line and a piece of equipment. For the purpose of reporting and recordkeeping, connector means flanged fittings that are not covered by insulation or other materials that prevent location of the fittings.

*Control device* means an enclosed combustion device, vapor recovery system, or flare.

*Double block and bleed system* means two block valves connected in series with a bleed valve or line that can vent the line between the two block valves.

*Equipment* means each pump, compressor, pressure relief device, sampling connection system, open-ended valve or line, valve, flange or other connector, product accumulator vessel in VHAP service, and any control devices or systems required by this subpart.

*First attempt at repair* means to take rapid action for the purpose of stopping or reducing leakage of organic material to atmosphere using best practices.

*In gas/vapor service* means that a piece of equipment contains process

fluid that is in the gaseous state at operating conditions.

*In liquid service* means that a piece of equipment is not in gas/vapor service.

*In-situ* sampling systems means non-extractive samplers or in-line samplers.

*In vacuum service* means that equipment is operating at an internal pressure which is at least 5 kilopascals (kPa) below ambient pressure.

*In VHAP service* means that a piece of equipment either contains or contacts a fluid (liquid or gas) that is at least 10 percent by weight a volatile hazardous air pollutant (VHAP) as determined according to the provisions of § 61.245(d). The provisions of § 61.245(d) also specify how to determine that a piece of equipment is not in VHAP service.

*In VOC service* means, for the purposes of this subpart, that (a) the piece of equipment contains or contacts a process fluid that is at least 10 percent VOC by weight (see 40 CFR 60.2 for the definition of volatile organic compound or VOC and 40 CFR 60.485(d) to determine whether a piece of equipment is not in VOC service) and (b) the piece of equipment is not in heavy liquid service as defined in 40 CFR 60.481.

*Open-ended valve or line* means any valve, except pressure relief valves, having one side of the valve seat in contact with process fluid and one side open to atmosphere, either directly or through open piping.

*Pressure release* means the emission of materials resulting from the system pressure being greater than the set pressure of the pressure relief device.

*Process unit* means equipment assembled to produce a VHAP or its derivatives as intermediates or final products, or equipment assembled to use a VHAP in the production of a product. A process unit can operate independently if supplied with sufficient feed or raw materials and sufficient product storage facilities.

*Process unit shutdown* means a work practice or operational procedure that stops production from a process unit or part of a process unit. An unscheduled work practice or operational procedure that stops production from a process unit or part of a process unit for less than 24 hours is not a process unit shutdown. The use of spare equipment

and technically feasible bypassing of equipment without stopping production are not process unit shutdowns.

*Product accumulator vessel* means any distillate receiver, bottoms receiver, surge control vessel, or product separator in VHAP service that is vented to atmosphere either directly or through a vacuum-producing system. A product accumulator vessel is in VHAP service if the liquid or the vapor in the vessel is at least 10 percent by weight VHAP.

*Repaired* means that equipment is adjusted, or otherwise altered, to eliminate a leak.

*Semiannual* means a 6-month period; the first semiannual period concludes on the last day of the last month during the 180 days following initial start-up for new sources; and the first semiannual period concludes on the last day of the last full month during the 180 days after the effective date of a specific subpart that references this subpart for existing sources.

*Sensor* means a device that measures a physical quantity or the change in a physical quantity, such as temperature, pressure, flow rate, pH, or liquid level.

*Stuffing box pressure* means the fluid (liquid or gas) pressure inside the casing or housing of a piece of equipment, on the process side of the inboard seal.

*Volatile hazardous air pollutant* or *VHAP* means a substance regulated under this part for which a standard for equipment leaks of the substance has been proposed and promulgated. Benzene is a VHAP. Vinyl chloride is a VHAP.

[49 FR 23513, June 6, 1984; 49 FR 38946, Oct. 2, 1984, as amended at 51 FR 34915, Sept. 30, 1986; 54 FR 38076, Sept. 14, 1989]

#### § 61.242-1 Standards: General.

(a) Each owner or operator subject to the provisions of this subpart shall demonstrate compliance with the requirements of §§ 61.242-1 to 61.242-11 for each new and existing source as required in 40 CFR 61.05, except as provided in §§ 61.243 and 61.244.

(b) Compliance with this subpart will be determined by review of records, review of performance test results, and inspection using the methods and procedures specified in § 61.245.

(c)(1) An owner or operator may request a determination of alternative means of emission limitation to the requirements of §§ 61.242-2, 61.242-3, 61.242-5, 61.242-6, 61.242-7, 61.242-8, 61.242-9 and 61.242-11 as provided in § 61.244.

(2) If the Administrator makes a determination that a means of emission limitation is at least a permissible alternative to the requirements of § 61.242-2, 61.242-3, 61.242-5, 61.242-6, 61.242-7, 61.242-8, 61.242-9 or 61.242-11, an owner or operator shall comply with the requirements of that determination.

(d) Each piece of equipment to which this subpart applies shall be marked in such a manner that it can be distinguished readily from other pieces of equipment.

(e) Equipment that is in vacuum service is excluded from the requirements of § 61.242-2, to § 61.242-11 if it is identified as required in § 61.246(e)(5).

[49 FR 23513, June 6, 1984; 49 FR 38946, Oct. 2, 1984]

#### § 61.242-2 Standards: Pumps.

(a)(1) Each pump shall be monitored monthly to detect leaks by the methods specified in § 61.245(b), except as provided in § 61.242-1(c) and paragraphs (d), (e), and (f) of this section.

(2) Each pump shall be checked by visual inspection each calendar week for indications of liquids dripping from the pump seal.

(b)(1) If an instrument reading of 10,000 ppm or greater is measured, a leak is detected.

(2) If there are indications of liquids dripping from the pump seal, a leak is detected.

(c)(1) When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected, except as provided in § 61.242-10.

(2) A first attempt at repair shall be made no later than 5 calendar days after each leak is detected.

(d) Each pump equipped with a dual mechanical seal system that includes a barrier fluid system is exempt from the requirements of paragraphs (a) and (b) of this section, provided the following requirements are met:

(1) Each dual mechanical seal system is:

- (i) Operated with the barrier fluid at a pressure that is at all times greater than the pump stuffing box pressure; or
- (ii) Equipped with a barrier fluid degassing reservoir that is connected by a closed-vent system to a control device that complies with the requirements of § 61.242-11; or
- (iii) Equipped with a system that purges the barrier fluid into a process stream with zero VHAP emissions to atmosphere.

(2) The barrier fluid is not in VHAP service and, if the pump is covered by standards under 40 CFR part 60, is not in VOC service.

(3) Each barrier fluid system is equipped with a sensor that will detect failure of the seal system, the barrier fluid system, or both.

(4) Each pump is checked by visual inspection each calendar week for indications of liquids dripping from the pump seal.

(i) If there are indications of liquid dripping from the pump seal at the time of the weekly inspection, the pump shall be monitored as specified in § 61.245 to determine the presence of VOC and VHAP in the barrier fluid.

(ii) If the monitor reading (taking into account any background readings) indicates the presence of VHAP, a leak is detected. For the purpose of this paragraph, the monitor may be calibrated with VHAP, or may employ a gas chromatography column to limit the response of the monitor to VHAP, at the option of the owner or operator.

(iii) If an instrument reading of 10,000 ppm or greater (total VOC) is measured, a leak is detected.

(5) Each sensor as described in paragraph (d)(3) of this section is checked daily or is equipped with an audible alarm.

(6)(i) The owner or operator determines, based on design considerations and operating experience, criteria applicable to the presence and frequency of drips and to the sensor that indicates failure of the seal system, the barrier fluid system, or both.

(ii) If indications of liquids dripping from the pump seal exceed the criteria established in paragraph (d)(6)(i) of this section, or if, based on the criteria es-

tablished in paragraph (d)(6)(i) of this section, the sensor indicates failure of the seal system, the barrier fluid system, or both, a leak is detected.

(iii) When a leak is detected, it shall be repaired as soon as practicable, but no later than 15 calendar days after it is detected, except as provided in § 61.242-10.

(iv) A first attempt at repair shall be made no later than five calendar days after each leak is detected.

(e) Any pump that is designated, as described in § 61.246(e)(2), for no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, is exempt from the requirements of paragraphs (a), (c), and (d) if the pump:

(1) Has no externally actuated shaft penetrating the pump housing,

(2) Is demonstrated to be operating with no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, as measured by the method specified in § 61.245(c), and

(3) Is tested for compliance with paragraph (e)(2) initially upon designation, annually, and at other times requested by the Administrator.

(f) If any pump is equipped with a closed-vent system capable of capturing and transporting any leakage from the seal or seals to a control device that complies with the requirements of § 61.242-11, it is exempt from the requirements of paragraphs (a)-(e).

(g) Any pump that is located within the boundary of an unmanned plant site is exempt from the weekly visual inspection requirement of paragraphs (a)(2) and (d)(4) of this section, and the daily requirements of paragraph (d)(5)(i) of this section, provided that each pump is visually inspected as often as practicable and at least monthly.

[49 FR 23513, June 6, 1984, as amended at 49 FR 38946, Oct. 2, 1984; 55 FR 28349, July 10, 1990]

#### § 61.242-3 Standards: Compressors.

(a) Each compressor shall be equipped with a seal system that includes a barrier fluid system and that prevents leakage of process fluid to atmosphere, except as provided in

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§ 61.242-1(c) and paragraphs (h) and (i) of this section.

(b) Each compressor seal system as required in paragraph (a) shall be:

(1) Operated with the barrier fluid at a pressure that is greater than the compressor stuffing box pressure; or

(2) Equipped with a barrier fluid system that is connected by a closed-vent system to a control device that complies with the requirements of § 61.242-11; or

(3) Equipped with a system that purges the barrier fluid into a process stream with zero VHAP emissions to atmosphere.

(c) The barrier fluid shall not be in VHAP service and, if the compressor is covered by standards under 40 CFR part 60, shall not be in VOC service.

(d) Each barrier fluid system as described in paragraphs (a)-(c) of this section shall be equipped with a sensor that will detect failure of the seal system, barrier fluid system, or both.

(e)(1) Each sensor as required in paragraph (d) of this section shall be checked daily or shall be equipped with an audible alarm unless the compressor is located within the boundary of an unmanned plant site.

(2) The owner or operator shall determine, based on design considerations and operating experience, a criterion that indicates failure of the seal system, the barrier fluid system, or both.

(f) If the sensor indicates failure of the seal system, the barrier fluid system, or both based on the criterion determined under paragraph (e)(2) of this section, a leak is detected.

(g)(1) When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected, except as provided in § 61.242-10.

(2) A first attempt at repair shall be made no later than 5 calendar days after each leak is detected.

(h) A compressor is exempt from the requirements of paragraphs (a) and (b) if it is equipped with a closed-vent system capable of capturing and transporting any leakage from the seal to a control device that complies with the requirements of § 61.242-11, except as provided in paragraph (i).

(i) Any Compressor that is designated, as described in § 61.246(e)(2), for

no detectable emission as indicated by an instrument reading of less than 500 ppm above background is exempt from the requirements of paragraphs (a)-(h) if the compressor:

(1) Is demonstrated to be operating with no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, as measured by the method specified in § 61.245(c); and

(2) Is tested for compliance with paragraph (i)(1) initially upon designation, annually, and at other times requested by the Administrator.

[49 FR 23513, June 6, 1984; 49 FR 38946, Oct. 2, 1984]

### § 61.242-4 Standards: Pressure relief devices in gas/vapor service.

(a) Except during pressure releases, each pressure relief device in gas/vapor service shall be operated with no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, as measured by the method specified in § 61.245(c).

(b)(1) After each pressure release, the pressure relief device shall be returned to a condition of no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, as soon as practicable, but no later than 5 calendar days after each pressure release, except as provided in § 61.242-10.

(2) No later than 5 calendar days after the pressure release, the pressure relief device shall be monitored to confirm the condition of no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, as measured by the method specified in § 61.245(c).

(c) Any pressure relief device that is equipped with a closed-vent system capable of capturing and transporting leakage from the pressure relief device to a control device as described in § 61.242-11 is exempt from the requirements of paragraphs (a) and (b).

[49 FR 23513, June 6, 1984; 49 FR 38946, Oct. 2, 1984]

### § 61.242-5 Standards: Sampling connecting systems.

(a) Each sampling connection system shall be equipped with a closed-purge

system or closed vent system, except as provided in §61.242-1(c).

(b) Each closed-purge system or closed-vent system as required in paragraph (a) shall:

(1) Return the purged process fluid directly to the process line with zero VHAP emissions to atmosphere; or

(2) Collect and recycle the purged process fluid with zero VHAP emissions to atmosphere; or

(3) Be designed and operated to capture and transport all the purged process fluid to a control device that complies with the requirements of §61.242-11.

(c) *In-situ* sampling systems are exempt from the requirements of paragraphs (a) and (b).

**§61.242-6 Standards: Open-ended valves or lines.**

(a)(1) Each open-ended valve or line shall be equipped with a cap, blind flange, plug, or a second valve, except as provided in §61.242-1(c).

(2) The cap, blind flange, plug, or second valve shall seal the open end at all times except during operations requiring process fluid flow through the open-ended valve or line.

(b) Each open-ended valve or line equipped with a second valve shall be operated in a manner such that the valve on the process fluid end is closed before the second valve is closed.

(c) When a double block and bleed system is being used, the bleed valve or line may remain open during operations that require venting the line between the block valves but shall comply with paragraph (a) at all other times.

**§61.242-7 Standards: Valves.**

(a) Each valve shall be monitored monthly to detect leaks by the method specified in §61.245(b) and shall comply with paragraphs (b)-(e), except as provided in paragraphs (f), (g), and (h) of this section, §61.243-1 or §61.243-2, and §61.242-1(c).

(b) If an instrument reading of 10,000 ppm or greater is measured, a leak is detected.

(c)(1) Any valve for which a leak is not detected for 2 successive months may be monitored the first month of

every quarter, beginning with the next quarter, until a leak is detected.

(2) If a leak is detected, the valve shall be monitored monthly until a leak is not detected for 2 successive months.

(d)(1) When a leak is detected, it shall be repaired as soon as practicable, but no later than 15 calendar days after the leak is detected, except as provided in §61.242-10.

(2) A first attempt at repair shall be made no later than 5 calendar days after each leak is detected.

(e) First attempts at repair include, but are not limited to, the following best practices where practicable:

(1) Tightening of bonnet bolts;

(2) Replacement of bonnet bolts;

(3) Tightening of packing gland nuts; and

(4) Injection of lubricant into lubricated packing.

(f) Any valve that is designated, as described in §61.246(e)(2), for no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, is exempt from the requirements of paragraph (a) if the valve:

(1) Has no external actuating mechanism in contact with the process fluid;

(2) Is operated with emissions less than 500 ppm above background, as measured by the method specified in §61.245(c); and

(3) Is tested for compliance with paragraph (f)(2) initially upon designation, annually, and at other times requested by the Administrator.

(g) Any valve that is designated, as described in §61.246(f)(1), as an unsafe-to-monitor valve is exempt from the requirements of paragraph (a) if:

(1) The owner or operator of the valve demonstrates that the valve is unsafe to monitor because monitoring personnel would be exposed to an immediate danger as a consequence of complying with paragraph (a); and

(2) The owner or operator of the valve has a written plan that requires monitoring of the valve as frequent as practicable during safe-to-monitor times.

(h) Any valve that is designated, as described in §61.246(f)(2), as a difficult-to-monitor valve is exempt from the requirements of paragraph (a) if:

(1) The owner or operator of the valve demonstrates that the valve cannot be monitored without elevating the monitoring personnel more than 2 meters above a support surface;

(2) The process unit within which the valve is located is an existing process unit; and

(3) The owner or operator of the valve follows a written plan that requires monitoring of the valve at least once per calendar year.

**§ 61.242-8 Standards: Pressure relief devices in liquid service and flanges and other connectors.**

(a) Pressure relief devices in liquid service and flanges and other connectors shall be monitored within 5 days by the method specified in § 61.245(b) if evidence of a potential leak is found by visual, audible, olfactory, or any other detection method, except as provided in § 61.242-1(c).

(b) If an instrument reading of 10,000 ppm or greater is measured, a leak is detected.

(c)(1) When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected, except as provided in § 61.242-10.

(2) The first attempt at repair shall be made no later than 5 calendar days after each leak is detected.

(d) First attempts at repair include, but are not limited to, the best practices described under § 61.242-7(e).

[49 FR 23513, June 6, 1984; 49 FR 38946, Oct. 2, 1984]

**§ 61.242-9 Standards: Product accumulator vessels.**

Each product accumulator vessel shall be equipped with a closed-vent system capable of capturing and transporting any leakage from the vessel to a control device as described in § 61.242-11, except as provided in § 61.242-1(c).

[49 FR 23513, June 6, 1984; 49 FR 38946, Oct. 2, 1984]

**§ 61.242-10 Standards: Delay of repair.**

(a) Delay of repair of equipment for which leaks have been detected will be allowed if the repair is technically infeasible without a process unit shutdown. Repair of this equipment shall

occur before the end of the next process unit shutdown.

(b) Delay of repair of equipment for which leaks have been detected will be allowed for equipment that is isolated from the process and that does not remain in VHAP service.

(c) Delay of repair for valves will be allowed if:

(1) The owner or operator demonstrates that emissions of purged material resulting from immediate repair are greater than the fugitive emissions likely to result from delay of repair, and

(2) When repair procedures are effected, the purged material is collected and destroyed or recovered in a control device complying with § 61.242-11.

(d) Delay of repair for pumps will be allowed if:

(1) Repair requires the use of a dual mechanical seal system that includes a barrier fluid system, and

(2) Repair is completed as soon as practicable, but not later than 6 months after the leak was detected.

(e) Delay of repair beyond a process unit shutdown will be allowed for a valve if valve assembly replacement is necessary during the process unit shutdown, valve assembly supplies have been depleted, and valve assembly supplies had been sufficiently stocked before the supplies were depleted. Delay of repair beyond the next process unit shutdown will not be allowed unless the next process unit shutdown occurs sooner than 6 months after the first process unit shutdown.

**§ 61.242-11 Standards: Closed-vent systems and control devices.**

(a) Owners or operators of closed-vent systems and control devices used to comply with provisions of this subpart shall comply with the provisions of this section, except as provided in § 61.242-1(c).

(b) Vapor recovery systems (for example, condensers and adsorbers) shall be designed and operated to recover the organic vapors vented to them with an efficiency of 95 percent or greater.

(c) Enclosed combustion devices shall be designed and operated to reduce the VHAP emissions vented to them with an efficiency of 95 percent or greater or to provide a minimum residence time

of 0.50 seconds at a minimum temperature of 760°C.

(d) Flares shall be used to comply with this subpart shall comply with the requirements of § 60.18.

(e) Owners or operators of control devices that are used to comply with the provisions of this subpart shall monitor these control devices to ensure that they are operated and maintained in conformance with their design.

(f)(1) Closed-vent systems shall be designed for and operated with no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background and by visual inspections, as determined by the methods specified as § 61.245(c).

(2) Closed-event systems shall be monitored to determine compliance with this section initially in accordance with § 61.05, annually, and at other times requested by the administrator.

(3) Leaks, as indicated by an instrument reading greater than 500 ppm and visual inspections, shall be repaired as soon as practicable, but not later than 15 calendar days after the leak is detected.

(4) A first attempt at repair shall be made no later than 5 calendar days after the leak is detected.

(g) Closed-vent systems and control devices used to comply with provisions of this subpart shall be operated at all times when emissions may be vented to them.

[49 FR 23513, June 6, 1984; 49 FR 38946, Oct. 2, 1984, as amended at 51 FR 2702, Jan. 21, 1986]

**§ 61.243-1 Alternative standards for valves in VHAP service—allowable percentage of valves leaking.**

(a) An owner or operator may elect to have all valves within a process unit to comply with an allowable percentage of valves leaking of equal to or less than 2.0 percent.

(b) The following requirements shall be met if an owner or operator decides to comply with an allowable percentage of valves leaking:

(1) An owner or operator must notify the Administrator that the owner or operator has elected to have all valves within a process unit to comply with the allowable percentage of valves leaking before implementing this alter-

native standard, as specified in § 61.247(d).

(2) A performance test as specified in paragraph (c) of this section shall be conducted initially upon designation, annually, and at other times requested by the Administrator.

(3) If a valve leak is detected, it shall be repaired in accordance with § 61.242-7(d) and (e).

(c) Performance tests shall be conducted in the following manner:

(1) All valves in VHAP service within the process unit shall be monitored within 1 week by the methods specified in § 61.245(b).

(2) If an instrument reading of 10,000 ppm or greater is measured, a leak is detected.

(3) The leak percentage shall be determined by dividing the number of valves in VHAP service for which leaks are detected by the number of valves in VHAP service within the process unit.

(d) Owner or operators who elect to have all valves comply with this alternative standard shall not have a process unit with a leak percentage greater than 2.0 percent.

(e) If an owner or operator decides no longer to comply with § 61.243-1, the owner or operator must notify the Administrator in writing that the work practice standard described in § 61.242-7(a)-(e) will be followed.

**§ 61.243-2 Alternative standards for valves in VHAP service—skip period leak detection and repair.**

(a)(1) An owner or operator may elect for all valves within a process unit to comply with one of the alternative work practices specified in paragraphs (b)(2) and (3) of this section.

(2) An owner or operator must notify the Administrator before implementing one of the alternative work practices, as specified in § 61.247(d).

(b)(1) An owner or operator shall comply initially with the requirements for valves, as described in § 61.242-7.

(2) After 2 consecutive quarterly leak detection periods with the percentage of valves leaking equal to or less than 2.0, an owner or operator may begin to skip 1 of the quarterly leak detection periods for the valves in VHAP service.

(3) After 5 consecutive quarterly leak detection periods with the percentage

of valves leaking equal to or less than 2.0, an owner or operator may begin to skip 3 of the quarterly leak detection periods for the valves in VHAP service.

(4) If the percentage of valves leaking is greater than 2.0, the owner or operator shall comply with the requirements as described in §61.242-7 but may again elect to use this section.

**§61.244 Alternative means of emission limitation.**

(a) Permission to use an alternative means of emission limitation under section 112(e)(3) of the Clean Air Act shall be governed by the following procedures:

(b) Where the standard is an equipment, design, or operational requirement:

(1) Each owner or operator applying for permission shall be responsible for collecting and verifying test data for an alternative means of emission limitation. limitation to test data for the equipment, design, and operational requirements.

(3) The Administrator may condition the permission on requirements that may be necessary to assure operation and maintenance to achieve the same emission reduction as the equipment, design, and operational requirements.

(c) Where the standard is a work practice:

(1) Each owner or operator applying for permission shall be responsible for collecting and verifying test data for an alternative means of emission limitation.

(2) For each source for which permission is requested, the emission reduction achieved by the required work practices shall be demonstrated for a minimum period of 12 months.

(3) For each source for which permission is requested, the emission reduction achieved by the alternative means of emission limitation shall be demonstrated.

(4) Each owner or operator applying for permission shall commit in writing each source to work practices that provide for emission reductions equal to or greater than the emission reductions achieved by the required work practices.

(5) The Administrator will compare the demonstrated emission reduction

for the alternative means of emission limitation to the demonstrated emission reduction for the required work practices and will consider the commitment in paragraph (c)(4).

(6) The Administrator may condition the permission on requirements that may be necessary to assure operation and maintenance to achieve the same emission reduction as the required work practices of this subpart.

(d) An owner or operator may offer a unique approach to demonstrate the alternative means of emission limitation.

(e)(1) Manufacturers of equipment used to control equipment leaks of a VHAP may apply to the Administrator for permission for an alternative means of emission limitation that achieves a reduction in emissions of the VHAP achieved by the equipment, design, and operational requirements of this subpart.

(2) The Administrator will grant permission according to the provisions of paragraphs (b), (c), and (d).

**§61.245 Test methods and procedures.**

(a) Each owner or operator subject to the provisions of this subpart shall comply with the test methods and procedures requirements provided in this section.

(b) Monitoring, as required in §§61.242, 61.243, 61.244, and 61.135, shall comply with the following requirements:

(1) Monitoring shall comply with Method 21 of appendix A of 40 CFR part 60.

(2) The detection instrument shall meet the performance criteria of Reference Method 21.

(3) The instrument shall be calibrated before use on each day of its use by the procedures specified in Reference Method 21.

(4) Calibration gases shall be:

(i) Zero air (less than 10 ppm of hydrocarbon in air); and

(ii) A mixture of methane or n-hexane and air at a concentration of approximately, but less than, 10,000 ppm methane or n-hexane.

(5) The instrument probe shall be traversed around all potential leak interfaces as close to the interface as possible as described in Reference Method 21.

(c) When equipment is tested for compliance with or monitored for no detectable emissions, the owner or operator shall comply with the following requirements:

(1) The requirements of paragraphs

(b) (1) through (4) shall apply.

(2) The background level shall be determined, as set forth in Reference Method 21.

(3) The instrument probe shall be traversed around all potential leak interfaces as close to the interface as possible as described in Reference Method 21.

(4) The arithmetic difference between the maximum concentration indicated by the instrument and the background level is compared with 500 ppm for determining compliance.

(d)(1) Each piece of equipment within a process unit that can conceivably contain equipment in VHAP service is presumed to be in VHAP service unless an owner or operator demonstrates that the piece of equipment is not in VHAP service. For a piece of equipment to be considered not in VHAP service, it must be determined that the percent VHAP content can be reasonably expected never to exceed 10 percent by weight. For purposes of determining the percent VHAP content of the process fluid that is contained in or contacts equipment, procedures that conform to the methods described in ASTM Method D-2267 (incorporated by the reference as specified in §61.18) shall be used.

(2)(i) An owner or operator may use engineering judgment rather than the procedures in paragraph (d)(1) of this section to demonstrate that the percent VHAP content does not exceed 10 percent by weight, provided that the engineering judgment demonstrates that the VHAP content clearly does not exceed 10 percent by weight. When an owner or operator and the Administrator do not agree on whether a piece of equipment is not in VHAP service, however, the procedures in paragraph (d)(1) of this section shall be used to resolve the disagreement.

(ii) If an owner or operator determines that a piece of equipment is in VHAP service, the determination can be revised only after following the procedures in paragraph (d)(1) of this section.

(3) Samples used in determining the percent VHAP content shall be representative of the process fluid that is contained in or contacts the equipment or the gas being combusted in the flare.

(e)(1) Method 22 of appendix A of 40 CFR part 60 shall be used to determine compliance of flares with the visible emission provisions of this subpart.

(2) The presence of a flare pilot flame shall be monitored using a thermocouple or any other equivalent device to detect the presence of a flame.

(3) The net heating value of the gas being combusted in a flare shall be calculated using the following equation:

$$H_T = K \left( \sum_{i=1}^n C_i H_i \right)$$

Where:

$H_T$  = Net heating value of the sample, MJ/scm; where the net enthalpy per mole of offgas is based on combustion at 25°C and 760 mm Hg, but the standard temperature for determining the volume corresponding to one mole is 20°C.

$K$  = Constant,  $1.74 \times 10^{-7}$  (1/ppm) (g mole/scm) (MJ/kcal) where standard temperature for (g mole/scm) is 20°C

$C_i$  = Concentration of sample component  $i$  in ppm, as measured by Reference Method 18 of Appendix A of 40 FR part 60 and ASTM D2504-67 (reapproved 1977) (incorporated by reference as specified in §61.18).

$H_i$  = Net heat of combustion of sample component  $i$ , kcal/g mole. The heats of combustion may be determined using ASTM D2382-76 (incorporated by reference as specified in §61.18) if published values are not available or cannot be calculated.

(4) The actual exit velocity of a flare shall be determined by dividing the volumetric flowrate (in units of standard temperature and pressure), as determined by Reference Method 2, 2A, 2C, or 2D, as appropriate, by the unobstructed (free) cross section area of the flare tip.

(5) The maximum permitted velocity,  $V_{max}$ , for air-assisted flares shall be determined by the following equation:

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$$V_{\text{Max}}=8.76+0.7084(H_T)$$

Where:

$V_{\text{Max}}$ =Maximum permitted velocity, m/sec

8.706=Constant.

0.7084=Constant.

$H_T$ =The net heating value as determined in paragraph (e)(3) of this section.

[49 FR 23513, June 6, 1984, as amended at 49 FR 38946, Oct. 2, 1984; 49 FR 43647, Oct. 31, 1984; 53 FR 36972, Sept. 23, 1988; 54 FR 38077, Sept. 14, 1989]

### § 61.246 Recordkeeping requirements.

(a)(1) Each owner or operator subject to the provisions of this subpart shall comply with the recordkeeping requirements of this section.

(2) An owner or operator of more than one process unit subject to the provisions of this subpart may comply with the recordkeeping requirements for these process units in one recordkeeping system if the system identifies each record by each process unit.

(b) When each leak is detected as specified in §§ 61.242-2, 61.242-3, 61.242-7, 61.242-8, and 61.135, the following requirements apply:

(1) A weatherproof and readily visible identification, marked with the equipment identification number, shall be attached to the leaking equipment.

(2) The identification on a valve may be removed after it has been monitored for 2 successive months as specified in § 61.242-7(c) and no leak has been detected during those 2 months.

(3) The identification on equipment, except on a valve, may be removed after it has been repaired.

(c) When each leak is detected as specified in §§ 61.242-2, 61.242-3, 61.242-7, 61.242-8, and 61.135, the following information shall be recorded in a log and shall be kept for 2 years in a readily accessible location:

(1) The instrument and operator identification numbers and the equipment identification number.

(2) The date the leak was detected and the dates of each attempt to repair the leak.

(3) Repair methods applied in each attempt to repair the leak.

(4) "Above 10,000" if the maximum instrument reading measured by the methods specified in § 61.245(a) after each repair attempt is equal to or greater than 10,000 ppm.

(5) "Repair delayed" and the reason for the delay if a leak is not repaired within 15 calendar days after discovery of the leak.

(6) The signature of the owner or operator (or designate) whose decision it was that repair could not be effected without a process shutdown.

(7) The expected date of successful repair of the leak if a leak is not repaired within 15 calendar days.

(8) Dates of process unit shutdowns that occur while the equipment is unrepaired.

(9) The date of successful repair of the leak.

(d) The following information pertaining to the design requirements for closed-vent systems and control devices described in § 61.242-11 shall be recorded and kept in a readily accessible location:

(1) Detailed schematics, design specifications, and piping and instrumentation diagrams.

(2) The dates and descriptions of any changes in the design specifications.

(3) A description of the parameter or parameters monitored, as required in § 61.242-11(e), to ensure that control devices are operated and maintained in conformance with their design and an explanation of why that parameter (or parameters) was selected for the monitoring.

(4) Periods when the closed-vent systems and control devices required in §§ 61.242-2, 61.242-3, 61.242-4, 61.242-5 and 61.242-9 are not operated as designed, including periods when a flare pilot light does not have a flame.

(5) Dates of startups and shutdowns of the closed-vent systems and control devices required in §§ 61.242-2, 61.242-3, 61.242-4, 61.242-5 and 61.242-9.

(e) The following information pertaining to all equipment to which a standard applies shall be recorded in a log that is kept in a readily accessible location:

(1) A list of identification numbers for equipment (except welded fittings) subject to the requirements of this subpart.

(2)(i) A list of identification numbers for equipment that the owner or operator elects to designate for no detectable emissions as indicated by an instrument reading of less than 500 ppm above background.

(ii) The designation of this equipment for no detectable emissions shall be signed by the owner or operator.

(3) A list of equipment identification numbers for pressure relief devices required to comply with § 61.242-4(a).

(4)(i) The dates of each compliance test required in §§ 61.242-2(e), 61.242-3(i), 61.242-4, 61.242-7(f), and 61.135(g).

(ii) The background level measured during each compliance test.

(iii) The maximum instrument reading measured at the equipment during each compliance test.

(5) A list of identification numbers for equipment in vacuum service.

(f) The following information pertaining to all valves subject to the requirements of § 61.242-7(g) and (h) shall be recorded in a log that is kept in a readily accessible location:

(1) A list of identification numbers for valves that are designated as unsafe to monitor, an explanation for each valve stating why the valve is unsafe to monitor, and the plan for monitoring each valve.

(2) A list of identification numbers for valves that are designated as difficult to monitor, an explanation for each valve stating why the valve is difficult to monitor, and the planned schedule for monitoring each valve.

(g) The following information shall be recorded for valves complying with § 61.243-2:

(1) A schedule of monitoring.

(2) The percent of valves found leaking during each monitoring period.

(h) The following information shall be recorded in a log that is kept in a readily accessible location:

(1) Design criterion required in §§ 61.242-2(d)(5), 61.242-3(e)(2), and 61.135(e)(4) and an explanation of the design criterion; and

(2) Any changes to this criterion and the reasons for the changes.

(i) The following information shall be recorded in a log that is kept in a readily accessible location for use in determining exemptions as provided in the

applicability section of this subpart and other specific subparts:

(1) An analysis demonstrating the design capacity of the process unit, and

(2) An analysis demonstrating that equipment is not in VHAP service.

(j) Information and data used to demonstrate that a piece of equipment is not in VHAP service shall be recorded in a log that is kept in a readily accessible location.

[49 FR 23513, June 6, 1984, as amended at 49 FR 38946, Oct. 2, 1984; 54 FR 38077, Sept. 14, 1989]

#### § 61.247 Reporting requirements.

(a)(1) An owner or operator of any piece of equipment to which this subpart applies shall submit a statement in writing notifying the Administrator that the requirements of §§ 61.242, 61.245, 61.246, and 61.247 are being implemented.

(2) In the case of an existing source or a new source which has an initial startup date preceding the effective date, the statement is to be submitted within 90 days of the effective date, unless a waiver of compliance is granted under § 61.11, along with the information required under § 61.10. If a waiver of compliance is granted, the statement is to be submitted on a date scheduled by the Administrator.

(3) In the case of new sources which did not have an initial startup date preceding the effective date, the statement shall be submitted with the application for approval of construction, as described in § 61.07.

(4) The statement is to contain the following information for each source:

(i) Equipment identification number and process unit identification.

(ii) Type of equipment (for example, a pump or pipeline valve).

(iii) Percent by weight VHAP in the fluid at the equipment.

(iv) Process fluid state at the equipment (gas/vapor or liquid).

(v) Method of compliance with the standard (for example, "monthly leak detection and repair" or "equipped with dual mechanical seals").

(b) A report shall be submitted to the Administrator semiannually starting 6 months after the initial report required in paragraph (a) of this section, that includes the following information:

(1) Process unit identification.  
 (2) For each month during the semi-annual reporting period,

(i) Number of valves for which leaks were detected as described in §61.242-7(b) of §61.243-2.

(ii) Number of valves for which leaks were not repaired as required in §61.242-7(d).

(iii) Number of pumps for which leaks were detected as described in §61.242-2(b) and (d)(6).

(iv) Number of pumps for which leaks were not repaired as required in §61.242-2(c) and (d)(6).

(v) Number of compressors for which leaks were detected as described in §61.242-3(f).

(vi) Number of compressors for which leaks were not repaired as required in §61.242-3(g).

(vii) The facts that explain any delay of repairs and, where appropriate, why a process unit shutdown was technically infeasible.

(3) Dates of process unit shutdowns which occurred within the semiannual reporting period.

(4) Revisions to items reported according to paragraph (a) if changes have occurred since the initial report or subsequent revisions to the initial report.

NOTE: Compliance with the requirements of §61.10(c) is not required for revisions documented under this paragraph.

(5) The results of all performance tests and monitoring to determine compliance with no detectable emissions and with §§61.243-1 and 61.243-2 conducted within the semiannual reporting period.

(c) In the first report submitted as required in paragraph (a) of this section, the report shall include a reporting schedule stating the months that semiannual reports shall be submitted. Subsequent reports shall be submitted according to that schedule, unless a revised schedule has been submitted in a previous semiannual report.

(d) An owner or operator electing to comply with the provisions of §§61.243-1 and 61.243-2 shall notify the Administrator of the alternative standard selected 90 days before implementing either of the provisions.

(e) An application for approval of construction or modification, §§61.05(a) and 61.07, will not be required if—

(1) The new source complies with the standard, §61.242;

(2) The new source is not part of the construction of a process unit; and

(3) In the next semiannual report required by paragraph (b) of this section, the information in paragraph (a)(4) of this section is reported.

[49 FR 23513, June 6, 1984, as amended at 49 FR 38947, Oct. 2, 1984; 54 FR 38077, Sept. 14, 1989]

### Subpart W—National Emission Standards for Radon Emissions From Operating Mill Tailings

SOURCE: 54 FR 51703, Dec. 15, 1989, unless otherwise noted.

#### §61.250 Designation of facilities.

The provisions of this subpart apply to owners or operators of facilities licensed to manage uranium byproduct materials during and following the processing of uranium ores, commonly referred to as uranium mills and their associated tailings. This subpart does not apply to the disposal of tailings.

#### §61.251 Definitions.

As used in this subpart, all terms not defined here have the meaning given them in the Clean Air Act or 40 CFR part 61, subpart A. The following terms shall have the following specific meanings:

(a) *Area* means the vertical projection of the pile upon the earth's surface.

(b) *Continuous disposal* means a method of tailings management and disposal in which tailings are dewatered by mechanical methods immediately after generation. The dried tailings are then placed in trenches or other disposal areas and immediately covered to limit emissions consistent with applicable Federal standards.

(c) *Dewatered* means to remove the water from recently produced tailings by mechanical or evaporative methods such that the water content of the tailings does not exceed 30 percent by weight.

(d) *Existing impoundment* means any uranium mill tailings impoundment

which is licensed to accept additional tailings and is in existence as of December 15, 1989.

(e) *Operation* means that an impoundment is being used for the continued placement of new tailings or is in standby status for such placement. An impoundment is in operation from the day that tailings are first placed in the impoundment until the day that final closure begins.

(f) *Phased disposal* means a method of tailings management and disposal which uses lined impoundments which are filled and then immediately dried and covered to meet all applicable Federal standards.

(g) *Uranium byproduct material or tailings* means the waste produced by the extraction or concentration of uranium from any ore processed primarily for its source material content. Ore bodies depleted by uranium solution extraction and which remain underground do not constitute byproduct material for the purposes of this subpart.

#### § 61.252 Standard.

(a) Radon-222 emissions to the ambient air from an existing uranium mill tailings pile shall not exceed 20 pCi/m<sup>2</sup>-s of radon-222.

(b) After December 15, 1989, no new tailings impoundment can be built unless it is designed, constructed and operated to meet one of the two following work practices:

(1) Phased disposal in lined tailings impoundments that are no more than 40 acres in area and meet the requirements of 40 CFR 192.32(a) as determined by the Nuclear Regulatory Commission. The owner or operator shall have no more than two impoundments, including existing impoundments, in operation at any one time.

(2) Continuous disposal of tailings such that tailings are dewatered and immediately disposed with no more than 10 acres uncovered at any time and operated in accordance with § 192.32(a) as determined by the Nuclear Regulatory Commission.

(c) All mill owners or operators shall comply with the provisions of 40 CFR 192.32(a) in the operation of tailings piles, the exemption for existing piles in 40 CFR 192.32(a) notwithstanding.

#### § 61.253 Determining compliance.

Compliance with the emission standard in this subpart shall be determined annually through the use of Method 115 of appendix B. When measurements are to be made over a one year period, EPA shall be provided with a schedule of the measurement frequency to be used. The schedule may be submitted to EPA prior to or after the first measurement period. EPA shall be notified 30 days prior to any emissions test so that EPA may, at its option, observe the test.

#### § 61.254 Annual reporting requirements.

(a) The owners or operators of operating existing mill impoundments shall report the results of the compliance calculations required in § 61.253 and the input parameters used in making the calculation for each calendar year shall be sent to EPA by March 31 of the following year. Each report shall also include the following information:

(1) The name and location of the mill.

(2) The name of the person responsible for the operation of the facility and the name of the person preparing the report (if different).

(3) The results of the testing conducted, including the results of each measurement.

(4) Each report shall be signed and dated by a corporate officer in charge of the facility and contain the following declaration immediately above the signature line: "I certify under penalty of law that I have personally examined and am familiar with the information submitted herein and based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment. See, 18 U.S.C. 1001."

(b) If the facility is not in compliance with the emission limits of § 61.252 in the calendar year covered by the report, then the facility must commence reporting to the Administrator on a monthly basis the information listed in paragraph (a) of this section, for the preceding month. These reports will start the month immediately following the submittal of the annual report for

the year in noncompliance and will be due 30 days following the end of each month. This increased level of reporting will continue until the Administrator has determined that the monthly reports are no longer necessary. In addition to all the information required in paragraph (a) of this section, monthly reports shall also include the following information:

(1) All controls or other changes in operation of the facility that will be or are being installed to bring the facility into compliance.

(2) If the facility is under a judicial or administrative enforcement decree, the report will describe the facilities performance under the terms of the decree.

(c) The first report will cover the emissions of calendar year 1990.

#### § 61.255 Recordkeeping requirements.

The owner or operator of the mill must maintain records documenting the source of input parameters including the results of all measurements upon which they are based, the calculations and/or analytical methods used to derive values for input parameters, and the procedure used to determine compliance. In addition, the documentation should be sufficient to allow an independent auditor to verify the accuracy of the determination made concerning the facility's compliance with the standard. These records must be kept at the mill for at least five years and upon request be made available for inspection by the Administrator, or his authorized representative.

#### § 61.256 Exemption from the reporting and testing requirements of 40 CFR 61.10.

All facilities designated under this subpart are exempt from the reporting requirements of 40 CFR 61.10.

### Subpart X—[Reserved]

### Subpart Y—National Emission Standard for Benzene Emissions From Benzene Storage Vessels

SOURCE: 54 FR 38077, Sept. 14, 1989, unless otherwise noted.

#### § 61.270 Applicability and designation of sources.

(a) The source to which this subpart applies is each storage vessel that is storing benzene having a specific gravity within the range of specific gravities specified in ASTM D 836-84 for Industrial Grade Benzene, ASTM D 835-85 for Refined Benzene-485, ASTM D 2359-85a for Refined Benzene-535, and ASTM D 4734-87 for Refined Benzene-545. These specifications are incorporated by reference as specified in § 61.18.

(b) Except for paragraph (b) in § 61.276, storage vessels with a design storage capacity less than 38 cubic meters (10,000 gallons) are exempt from the provisions of this subpart.

(c) This subpart does not apply to storage vessels used for storing benzene at coke by-product facilities.

(d) This subpart does not apply to vessels permanently attached to motor vehicles such as trucks, rail cars, barges, or ships.

(e) This subpart does not apply to pressure vessels designed to operate in excess of 204.9 kPa and without emissions to the atmosphere.

(f) A designated source subject to the provisions of this subpart that is also subject to applicable provisions of 40 CFR part 60 subparts K, Ka, and Kb shall be required to comply only with the subpart that contains the most stringent requirements for that source.

#### § 61.271 Emission standard.

The owner or operator of each storage vessel with a design storage capacity greater than or equal to 38 cubic meters (10,000 gallons) to which this subpart applies shall comply with the requirements in paragraph (d) of this section and with the requirements either in paragraph (a), (b), or (c) of this section, or equivalent as provided in § 61.273.

(a) The storage vessel shall be equipped with a fixed roof and an internal floating roof.

(1) An internal floating roof means a cover that rests on the liquid surface (but not necessarily in complete contact with it) inside a storage vessel that has a permanently affixed roof. The internal floating roof shall be floating on the liquid surface at all

times, except during initial fill and during those intervals when the storage vessel is completely emptied or subsequently emptied and refilled. When the roof is resting on the leg supports, the process of filling, emptying, or refilling shall be continuous and shall be accomplished as rapidly as possible.

(2) Each internal floating roof shall be equipped with one of the closure devices listed in paragraphs (a)(2) (i), (ii), or (iii) of this section between the wall of the storage vessel and the edge of the internal floating roof. This requirement does not apply to each existing storage vessel for which construction of an internal floating roof equipped with a continuous seal commenced on or before July 28, 1988. A continuous seal means a seal that forms a continuous closure that completely covers the space between the wall of the storage vessel and the edge of the internal floating roof.

(i) A foam- or liquid-filled seal mounted in contact with the liquid (liquid-mounted seal). A liquid-mounted seal means a foam- or liquid-filled seal mounted in contact with the liquid between the wall of the storage vessel and the floating roof continuously around the circumference of the vessel.

(ii) Two seals mounted one above the other so that each forms a continuous closure that completely covers the space between the wall of the storage vessel and the edge of the internal floating roof. The lower seal may be vapor-mounted, but both must be continuous.

(iii) A metallic shoe seal. A metallic shoe seal (also referred to as a mechanical shoe seal) is, but is not limited to, a metal sheet held vertically against the wall of the storage vessel by springs or weighted levers and is connected by braces to the floating roof. A flexible coated fabric (envelope) spans the annular space between the metal sheet and the floating roof.

(3) Automatic bleeder vents are to be closed at all times when the roof is floating, except when the roof is being floated off or is being landed on the roof leg supports.

(4) Each opening in a noncontact internal floating roof except for automatic bleeder vents (vacuum breaker

vents) and the rim space vents is to provide a projection below the liquid surface.

(5) Each internal floating roof shall meet the specifications listed below. If an existing storage vessel had an internal floating roof with a continuous seal as of July 28, 1988, the requirements listed below do not have to be met until the first time after September 14, 1989, the vessel is emptied and degassed or September 14, 1999, whichever occurs first.

(i) Each opening in the internal floating roof except for leg sleeves, automatic bleeder vents, rim space vents, column wells, ladder wells, sample wells, and stub drains is to be equipped with a cover or lid. The cover or lid shall be equipped with a gasket. Covers on each access hatch and automatic gauge float well shall be bolted.

(ii) Each penetration of the internal floating roof for the purposes of sampling shall be a sample well. Each sample well shall have a slit fabric cover that covers at least 90 percent of the opening.

(iii) Each automatic bleeder vent shall be gasketed.

(iv) Rim space vents shall be equipped with a gasket.

(v) Each penetration of the internal floating roof that allows for passage of a ladder shall have a gasketed sliding cover.

(vi) Each penetration of the internal floating roof that allows for passage of a column supporting the fixed roof shall have a flexible fabric sleeve seal or a gasketed sliding cover.

(6) Each cover or lid on any opening in the internal floating roof shall be closed (i.e., no visible gaps), except when a device is in actual use. Covers on each access hatch and each automatic gauge float well which are equipped with bolts shall be bolted when they are not in use. Rim space vents are to be set to open only when the internal floating roof is not floating or at the manufacturer's recommended setting.

(b) The storage vessel shall have an external floating roof.

(1) An external floating roof means a pontoon-type or double-deck-type cover that rests on the liquid surface in a vessel with no fixed roof.

(2) Each external floating roof shall be equipped with a closure device between the wall of the storage vessel and the roof edge. Except as provided in paragraph (b)(5) of this section, the closure device is to consist of two seals, one above the other. The lower seal is referred to as the primary seal and the upper seal is referred to as the secondary seal.

(i) The primary seal shall be either a metallic shoe seal or a liquid-mounted seal. A liquid-mounted seal means a foam- or liquid-filled seal mounted in contact with the liquid between the wall of the storage vessel and the floating roof continuously around the circumference of the vessel. A metallic shoe seal (which can also be referred to as a mechanical shoe seal) is, but is not limited to, a metal sheet held vertically against the wall of the storage vessel by springs or weighted levers and is connected by braces to the floating roof. A flexible coated fabric (envelope) spans the annular space between the metal sheet and the floating roof. Except as provided in §61.272(b)(4), the primary seal shall completely cover the annular space between the edge of the floating roof and the vessel wall.

(ii) The secondary seal shall completely cover the annular space between the external floating roof and the wall of the storage vessel in a continuous fashion except as allowed in §61.272(b)(4).

(3) Except for automatic bleeder vents and rim space vents, each opening in the noncontact external floating roof shall provide a projection below the liquid surface. Except for automatic bleeder vents, rim space vents, roof drains, and leg sleeves, each opening in the roof is to be equipped with a gasketed cover, seal or lid which is to be maintained in a closed position at all times (i.e., no visible gap) except when the device is in actual use. Automatic bleeder vents are to be closed at all times when the roof is floating, except when the roof is being floated off or is being landed on the roof leg supports. Rim vents are to be set to open when the roof is being floated off the roof leg supports or at the manufacturer's recommended setting. Automatic bleeder vents and rim space vents are to be gasketed. Each emergency roof

drain is to be provided with a slotted membrane fabric cover that covers at least 90 percent of the area of the opening.

(4) The roof shall be floating on the liquid at all times (i.e., off the roof leg supports) except during initial fill until the roof is lifted off leg supports and when the vessel is completely emptied and subsequently refilled. The process of emptying and refilling when the roof is resting on the leg supports shall be continuous and shall be accomplished as rapidly as possible.

(5) The requirement for a secondary seal does not apply to each existing storage vessel that was equipped with a liquid-mounted primary seal as of July 28, 1988, until after the first time after September 14, 1989, when the vessel is emptied and degassed or 10 years from September 14, 1989, whichever occurs first.

(c) The storage vessel shall be equipped with a closed vent system and a control device.

(1) The closed vent system shall be designed to collect all benzene vapors and gases discharged from the storage vessel and operated with no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background and visual inspections, as determined in §61.242-11 (subpart V).

(2) The control device shall be designed and operated to reduce inlet benzene emissions by 95 percent or greater. If a flare is used as the control device, it shall meet the specifications described in the general control device requirements of 40 CFR 60.18.

(3) The specifications and requirements listed in paragraphs (c)(1) and (c)(2) of this section for closed vent systems and control devices do not apply during periods of routine maintenance. During periods of routine maintenance, the benzene level in the storage vessel(s) serviced by the control device subject to the provisions of §61.271(c) may be lowered but not raised. Periods of routine maintenance shall not exceed 72 hours as outlined in the maintenance plan required by §61.272(c)(1)(iii).

(4) The specifications and requirements listed in paragraphs (c)(1) and (c)(2) of this section for closed vents

and control devices do not apply during a control system malfunction. A control system malfunction means any sudden and unavoidable failure of air pollution control equipment. A failure caused entirely or in part by design deficiencies, poor maintenance, careless operation, or other preventable upset condition or equipment breakdown is not considered a malfunction.

(d) The owner or operator of each affected storage vessel shall meet the requirements of paragraph (a), (b), or (c) of this section as follows:

(1) The owner or operator of each existing benzene storage vessel shall meet the requirements of paragraph (a), (b), or (c) of this section no later than 90 days after September 14, 1989, with the exceptions noted in paragraphs (a)(5) and (b)(5), unless a waiver of compliance has been approved by the Administrator in accordance with § 61.11.

(2) The owner or operator of each benzene storage vessel upon which construction commenced after September 14, 1989, shall meet the requirements of paragraph (a), (b), or (c) of this section prior to filling (i.e., roof is lifted off leg supports) the storage vessel with benzene.

(3) The owner or operator of each benzene storage vessel upon which construction commenced on or after July 28, 1988, and before September 14, 1989, shall meet the requirements of paragraph (a), (b), or (c) of this section on September 14, 1989.

[54 FR 38077, Sept. 14, 1989; 54 FR 50887, Dec. 11, 1989]

**§ 61.272 Compliance provisions.**

(a) For each vessel complying with § 61.271(a) (fixed roof and internal floating roof) each owner or operator shall:

(1) After installing the control equipment required to comply with § 61.271(a), visually inspect the internal floating roof, the primary seal, and the secondary seal (if one is in service), prior to filling the storage vessel with benzene. If there are holes, tears or other openings in the primary seal, the secondary seal, or the seal fabric, or defects in the internal floating roof, the owner or operator shall repair the items before filling the storage vessel.

(2) Visually inspect the internal floating roof and the primary seal or the secondary seal (if one is in service) through manholes and roof hatches on the fixed roof at least once every 12 months after initial fill, or at least once every 12 months after September 14, 1989, except as provided in paragraph (a)(4)(i) of this section. If the internal floating roof is not resting on the surface of the benzene liquid inside the storage vessel, or there is liquid on the roof, or the seal is detached, or there are holes or tears in the seal fabric, the owner or operator shall repair the items or empty and remove the storage vessel from service within 45 days. If a failure that is detected during inspections required in this paragraph cannot be repaired within 45 days and if the vessel cannot be emptied within 45 days, an extension of up to 30 additional days may be requested from the Administrator in the inspection report required in § 61.275(a). Such a request for an extension must document that alternate storage capacity is unavailable and specify a schedule of actions the company will take that will ensure that the control equipment will be repaired or the vessel will be emptied as soon as possible.

(3) Visually inspect the internal floating roof, the primary seal, the secondary seal (if one is in service), gaskets, slotted membranes and sleeve seals (if any) each time the storage vessel is emptied and degassed. In no event shall inspections conducted in accordance with this provision occur at intervals greater than 10 years in the case of vessels conducting the annual visual inspections as specified in paragraph (a)(2) of this section and at intervals greater than 5 years in the case of vessels specified in paragraph (a)(4)(i) of this section.

(i) For all the inspections required by paragraphs (a)(1) and (a)(3) of this section, the owner or operator shall notify the Administrator in writing at least 30 days prior to the refilling of each storage vessel to afford the Administrator the opportunity to have an observer present. If the inspection required by paragraph (a)(3) of this section is not planned and the owner or operator could not have known about

the inspection 30 days in advance of refilling the vessel, the owner or operator shall notify the Administrator at least 7 days prior to the refilling of the storage vessel. Notification shall be made by telephone immediately followed by written documentation demonstrating why the inspection was unplanned. Alternatively, the notification including the written documentation may be made in writing and sent by express mail so that it is received by the Administrator at least 7 days prior to refilling.

(ii) If the internal floating roof has defects, the primary seal has holes, tears, or other openings in the seal or the seal fabric, or the secondary seal has holes, tears, or other openings in the seal or the seal fabric, or the gaskets no longer close off the liquid surfaces from the atmosphere, or the slotted membrane has more than 10 percent open area, the owner or operator shall repair the items as necessary so that none of the conditions specified in this paragraph exist before refilling the storage vessel with benzene.

(4) For vessels equipped with a double-seal system as specified in § 61.271(a)(2)(ii):

(i) Visually inspect the vessel as specified in paragraph (a)(3) of this section at least every 5 years; or

(ii) Visually inspect the vessel annually as specified in paragraph (a)(2) of this section, and at least every 10 years as specified in paragraph (a)(3) of this section.

(b) For each vessel complying with § 61.271(b) (external floating roof) the owner or operator shall:

(1) Determine the gap areas and maximum gap widths between the primary seal and the wall of the storage vessel, and the secondary seal and the wall of the storage vessel according to the following frequency.

(i) For an external floating roof vessel equipped with primary and secondary seals, measurements of gaps between the vessel wall and the primary seal (seal gaps) shall be performed during the hydrostatic testing of the vessel or within 90 days of the initial fill with benzene or within 90 days of September 14, 1989, whichever occurs last, and at least once every 5 years there-

after, except as provided in paragraph (b)(1)(ii) of this section.

(ii) For an external floating roof vessel equipped with a liquid-mounted primary seal and without a secondary seal as provided for in § 61.271(b)(5), measurement of gaps between the vessel wall and the primary seal (seal gaps) shall be performed within 90 days of September 14, 1989, and at least once per year thereafter. When a secondary seal is installed over the primary seal, measurement of primary seal gaps shall be performed within 90 days of installation and at least once every 5 years thereafter.

(iii) For an external floating roof vessel equipped with primary and secondary seals, measurements of gaps between the vessel wall and the secondary seal shall be performed within 90 days of the initial fill with benzene, within 90 days of installation of the secondary seal, or within 90 days after September 14, 1989, whichever occurs last, and at least once per year thereafter.

(iv) If any source ceases to store benzene for a period of 1 year or more, subsequent introduction of benzene into the vessel shall be considered an initial fill for the purposes of paragraphs (b)(1)(i), (b)(1)(ii), and (b)(1)(iii) of this section.

(2) Determine gap widths and areas in the primary and secondary seals individually by the following procedures:

(i) Measure seal gaps, if any, at one or more floating roof levels when the roof is floating off the roof leg supports.

(ii) Measure seal gaps around the entire circumference of the vessel in each place where a 0.32 centimeter (cm) (1/8 in) diameter uniform probe passes freely (without forcing or binding against the seal) between the seal and the wall of the storage vessel and measure the circumferential distance of each such location.

(iii) The total surface area of each gap described in paragraph (b)(2)(ii) of this section shall be determined by using probes of various widths to measure accurately the actual distance from the vessel wall to the seal and multiplying each such width by its respective circumferential distance.

(3) Add the gap surface area of each gap location for the primary seal and the secondary seal individually. Divide the sum for each seal by the nominal diameter of the vessel and compare each ratio to the respective standards in § 61.272(b)(4) and § 61.272(b)(5).

(4) Repair conditions that do not meet requirements listed in paragraph (b)(4) (i) and (ii) within 45 days of identification in any inspection or empty and remove the storage vessel from service within 45 days.

(i) The accumulated area of gaps between the vessel wall and the metallic shoe seal or the liquid-mounted primary seal shall not exceed 212 cm<sup>2</sup> per meter of vessel diameter (10.0 in<sup>2</sup> per foot of vessel diameter) and the width of any portion of any gap shall not exceed 3.81 cm (1½ in).

(A) One end of the metallic shoe is to extend into the stored liquid and the other end is to extend a minimum vertical distance of 61 cm (24 in) above the stored liquid surface.

(B) There are to be no holes, tears, or other openings in the shoe, seal fabric, or seal envelope.

(ii) The secondary seal is to meet the following requirements:

(A) The secondary seal is to be installed above the primary seal so that it completely covers the space between the roof edge and the vessel wall except as provided in paragraph (b)(4)(ii)(B) of this section.

(B) The accumulated area of gaps between the vessel wall and the secondary seal shall not exceed 21.2 cm<sup>2</sup> per meter of vessel diameter (1.0 in<sup>2</sup> per foot of vessel diameter) or the width of any portion of any gap shall not exceed 1.27 cm (½ in). These seal gap requirements may be exceeded during the measurement of primary seal gaps as required by paragraph (b)(1)(i) or (b)(1)(ii) of this section.

(C) There are to be no holes, tears, or other openings in the seal or seal fabric.

(iii) If a failure that is detected during inspections required in this paragraph cannot be repaired within 45 days and if the vessel cannot be emptied within 45 days, an extension of up to 30 additional days may be requested from the Administrator in the inspection report required in § 61.275(d).

Such extension request must include a demonstration of unavailability of alternate storage capacity and a specification of a schedule that will assure that the control equipment will be repaired or the vessel will be emptied as soon as possible.

(5) The owner or operator shall notify the Administrator 30 days in advance of any gap measurements required by paragraph (b)(1) of this section to afford the Administrator the opportunity to have an observer present.

(6) Visually inspect the external floating roof, the primary seal, secondary seal, and fittings each time the vessel is emptied and degassed.

(i) If the external floating roof has defects, the primary seal has holes, tears, or other openings in the seal or the seal fabric, or the secondary seal has holes, tears, or other openings in the seal or the seal fabric, the owner or operator shall repair the items as necessary so that none of the conditions specified in this paragraph exist before filling or refilling the storage vessel with benzene.

(ii) For all the inspections required by paragraph (b)(6) of this section, the owner or operator shall notify the Administrator in writing at least 30 days prior to filling or refilling of each storage vessel to afford the Administrator the opportunity to inspect the storage vessel prior to refilling. If the inspection required by paragraph (b)(6) of this section is not planned and the owner or operator could not have known about the inspection 30 days in advance of refilling the vessel, the owner or operator shall notify the Administrator at least 7 days prior to refilling of the storage vessel. Notification shall be made by telephone immediately followed by written documentation demonstrating why the inspection was unplanned. Alternatively, this notification including the written documentation may be made in writing and sent by express mail so that it is received by the Administrator at least 7 days prior to the refilling.

(c) The owner or operator of each source that is equipped with a closed vent system and control device as required in § 60.271(c), other than a flare, shall meet the following requirements.

(1) Within 90 days after initial fill or after September 14, 1989, whichever comes last, submit for approval by the Administrator, an operating plan containing the information listed below.

(i) Documentation demonstrating that the control device being used achieves the required control efficiency during reasonably expected maximum loading conditions. This documentation is to include a description of the gas stream which enters the control device, including flow and benzene content under varying liquid level conditions (dynamic and static) and manufacturer's design specifications for the control device. If the control device or the closed vent capture system receives vapors, gases or liquids, other than fuels, from sources that are not designated sources under this subpart, the efficiency demonstration is to include consideration of all vapors, gases and liquids received by the closed vent capture system and control device. If an enclosed combustion device with a minimum residence time of 0.75 seconds and a minimum temperature of 816 °C is used to meet the 95 percent requirement, documentation that those conditions exist is sufficient to meet the requirements of this paragraph.

(ii) A description of the parameter or parameters to be monitored to ensure that the control device is operated and maintained in conformance with its design and an explanation of the criteria used for selection of that parameter (or parameters).

(iii) A maintenance plan for the system including the type of maintenance necessary, planned frequency of maintenance, and lengths of maintenance periods for those operations that would require the closed vent system or the control device to be out of compliance with § 61.271(c). The maintenance plan shall require that the system be out of compliance with § 61.271(c) for no more than 72 hours per year.

(2) Operate, monitor the parameters, and maintain the closed vent system and control device in accordance with the operating plan submitted to the Administrator in accordance with paragraph (c)(1) of this section, unless the plan was modified by the Administrator during the approval process. In this case, the modified plan applies.

(d) The owner or operator of each source that is equipped with a closed vent system and a flare to meet the requirements in § 61.271(c) shall meet the requirements as specified in the general control device requirements in 40 CFR 60.18 (e) and (f).

**§ 61.273 Alternative means of emission limitation.**

(a) Upon written application from any person, the Administrator may approve the use of alternative means of emission limitation which have been demonstrated to his satisfaction to achieve a reduction in benzene emissions at least equivalent to the reduction in emissions achieved by any requirement in § 61.271 (a), (b), or (c) of this subpart.

(b) Determination of equivalence to the reduction in emissions achieved by the requirements of § 61.271 (a), (b), or (c) will be evaluated using the following information to be included in the written application to the Administrator:

(1) Actual emissions tests that use full-size or scale-model storage vessels that accurately collect and measure all benzene emissions from a given control device, and that accurately simulate wind and account for other emission variables such as temperature and barometric pressure.

(2) An engineering evaluation that the Administrator determines is an accurate method of determining equivalence.

(c) The Administrator may condition approval of equivalency on requirements that may be necessary to ensure operation and maintenance to achieve the same emission reduction as the requirements of § 61.271 (a), (b), or (c).

(d) If, in the Administrator's judgment, an application for equivalence may be approvable, the Administrator will publish a notice of preliminary determination in the FEDERAL REGISTER and provide the opportunity for public hearing. After notice and opportunity for public hearing, the Administrator will determine the equivalence of the alternative means of emission limitation and will publish the final determination in the FEDERAL REGISTER.

**§ 61.274 Initial report.**

(a) The owner or operator of each storage vessel to which this subpart applies and which has a design capacity greater than or equal to 38 cubic meters (10,000 gallons) shall submit an initial report describing the controls which will be applied to meet the equipment requirements in § 61.271. For an existing storage vessel or a new storage vessel for which construction and operation commenced prior to September 14, 1989, this report shall be submitted within 90 days of September 14, 1989, and can be combined with the report required by § 61.10. For a new storage vessel for which construction or operation commenced on or after September 14, 1989, the report shall be combined with the report required by § 61.07. In the case where the owner or operator seeks to comply with § 61.271(c) with a control device other than a flare, this information may consist of the information required by § 61.272(c)(1).

(b) The owner or operator of each storage vessel seeking to comply with § 61.271(c) with a flare, shall submit a report containing the measurements required by 40 CFR 60.18(f) (1), (2), (3), (4), (5), and (6). For the owner or operator of an existing storage vessel not seeking to obtain a waiver or a new storage vessel for which construction and operation commenced prior to September 14, 1989, this report shall be combined with the report required by paragraph (a) of this section. For the owner or operator of an existing storage vessel seeking to obtain a waiver, the reporting date will be established in the response to the waiver request. For the owner or operator of a new storage vessel for which construction or operation commenced after September 14, 1989, the report shall be submitted within 90 days of the date the vessel is initially filled (or partially filled) with benzene.

**§ 61.275 Periodic report.**

(a) The owner or operator of each storage vessel to which this subpart applies after installing control equipment in accordance with § 61.271(a) (fixed roof and internal floating roof) shall submit a report describing the results of each inspection conducted in accordance

with § 61.272(a). For vessels for which annual inspections are required under § 61.272(a)(2), the first report is to be submitted no more than 12 months after the initial report submitted in accordance with § 61.274, and each report is to be submitted within 60 days of each annual inspection.

(1) Each report shall include the date of the inspection of each storage vessel and identify each storage vessel in which:

(i) The internal floating roof is not resting on the surface of the benzene liquid inside the storage vessel, or there is liquid on the roof, or the seal is detached from the internal floating roof, or there are holes, tears or other openings in the seal or seal fabric; or

(ii) There are visible gaps between the seal and the wall of the storage vessel.

(2) Where an annual report identifies any condition in paragraph (a)(1) of this section the annual report shall describe the nature of the defect, the date the storage vessel was emptied, and the nature of an date the repair was made, except as provided in paragraph (a)(3) of this section.

(3) If an extension is requested in an annual periodic report in accordance with § 61.272(a)(2), a supplemental periodic report shall be submitted within 15 days of repair. The supplemental periodic report shall identify the vessel and describe the date the storage vessel was emptied and the nature of and date the repair was made.

(b) The owner or operator of each storage vessel to which this subpart applies after installing control equipment in accordance with § 61.271(a) (fixed roof and internal floating roof) shall submit a report describing the results of each inspection conducted in accordance with § 61.272(a) (3) or (4).

(1) The report is to be submitted within 60 days of conducting each inspection required by § 61.272(a) (3) or (4).

(2) Each report shall identify each storage vessel in which the owner or operator finds that the internal floating roof has defects, the primary seal has holes, tears, or other openings in the seal or the seal fabric, or the secondary seal (if one has been installed) has holes, tears, or other openings in

the seal or the seal fabric, or the gaskets no longer close off the liquid surfaces from the atmosphere, or the slotted membrane has more than 10 percent open area. The report shall also describe the nature of the defect, the date the storage vessel was emptied, and the nature of and date the repair was made.

(c) Any owner or operator of an existing storage vessel which had an internal floating roof with a continuous seal as of July 28, 1988, and which seeks to comply with the requirements of § 61.271(a)(5) during the first time after September 14, 1989, when the vessel is emptied and degassed but no later than 10 years from September 14, 1989, shall notify the Administrator 30 days prior to the completion of the installation of such controls and the date of refilling of the vessel so the Administrator has an opportunity to have an observer present to inspect the storage vessel before it is refilled. This report can be combined with the one required by § 61.275(b).

(d) The owner or operator of each storage vessel to which this subpart applies after installing control equipment in accordance with § 61.271(b) (external floating roof) shall submit a report describing the results of each seal gap measurement made in accordance with § 61.272(b). The first report is to be submitted no more than 12 months after the initial report submitted in accordance with § 61.274(a), and each annual periodic report is to be submitted within 60 days of each annual inspection.

(1) Each report shall include the date of the measurement, the raw data obtained in the measurement, and the calculations described in § 61.272(b) (2) and (3), and shall identify each storage vessel which does not meet the gap specifications of § 61.272(b). Where an annual report identifies any vessel not meeting the seal gap specifications of § 61.272(b) the report shall describe the date the storage vessel was emptied, the measures used to correct the condition and the date the storage vessel was brought into compliance.

(2) If an extension is requested in an annual periodic report in accordance with § 61.272(b)(4)(iii), a supplemental periodic report shall be submitted within 15 days of repair. The supple-

mental periodic report shall identify the vessel and describe the date the vessel was emptied and the nature of and date the repair was made.

(e) Excess emission report.

(1) The owner or operator of each source seeking to comply with § 61.271(c) (vessels equipped with closed vent systems with control devices) shall submit a quarterly report informing the Administrator of each occurrence that results in excess emissions. Excess emissions are emissions that occur at any time when compliance with the specifications and requirements of § 61.271(c) are not achieved, as evidenced by the parameters being measured in accordance with § 61.272(c)(1)(ii) if a control device other than a flare is used, or by the measurements required in § 61.272(d) and the general control device requirements in 40 CFR 60.18(f) (1) and (2) if a flare is used.

(2) The owner or operator shall submit the following information as a minimum in the report required by (e)(1) of this section:

(i) Identify the stack and other emission points where the excess emissions occurred;

(ii) A statement of whether or not the owner or operator believes a control system malfunction has occurred.

(3) If the owner or operator states that a control system malfunction has occurred, the following information as a minimum is also to be included in the report required under paragraph (e)(1) of this section:

(i) Time and duration of the control system malfunction as determined by continuous monitoring data (if any), or the inspections or monitoring done in accordance with the operating plan required by § 61.272(c).

(ii) Cause of excess emissions.

#### **§ 61.276 Recordkeeping.**

(a) Each owner or operator with a storage vessel subject to this subpart shall keep copies of all the reports and records required by this subpart for at least 2 years, except as specified in paragraphs (b) and (c)(1) of this section.

(b) Each owner or operator with a storage vessel, including any vessel which has a design storage capacity

less than 38 cubic meters (10,000 gallons), shall keep readily accessible records showing the dimensions of the storage vessel and an analysis showing the capacity of the storage vessel. This record shall be kept as long as the storage vessel is in operation. Each storage vessel with a design capacity of less than 38 cubic meters (10,000 gallons) is subject to no provisions of this subpart other than those required by this paragraph.

(c) The following information pertaining to closed vent system and control devices shall be kept in a readily accessible location.

(1) A copy of the operating plan. This record shall be kept as long as the closed vent system and control device is in use.

(2) A record of the measured values of the parameters monitored in accordance with § 61.272(c)(1)(ii) and § 61.272(c)(2).

(3) A record of the maintenance performed in accordance with § 61.272(c)(1)(iii) of the operating plan, including the following:

(i) The duration of each time the closed vent system and control device does not meet the specifications of § 61.271(c) due to maintenance, including the following:

(A) The first time of day and date the requirements of § 61.271(c) were not met at the beginning of maintenance.

(B) The first time of day and date the requirements of § 61.271(c) were met at the conclusion of maintenance.

(C) A continuous record of the liquid level in each storage vessel that the closed vent system and control device receive vapors from during the interval between the times specified by (c)(3)(i)(A) and (c)(3)(i)(B). Pumping records (simultaneous input and output) may be substituted for records of the liquid level.

#### § 61.277 Delegation of authority.

(a) In delegating implementation and enforcement authority to a State under section 112(d) of the Act, the authorities contained in paragraph (b) of this section shall be retained by the Administrator and not transferred to a State.

(b) Authorities which will not be delegated to States: § 61.273.

#### Subparts Z-AA—[Reserved]

#### Subpart BB—National Emission Standard for Benzene Emissions From Benzene Transfer Operations

SOURCE: At 55 FR 8341, Mar. 7, 1990, unless otherwise noted.

#### § 61.300 Applicability.

(a) The affected facility to which this subpart applies is the total of all loading racks at which benzene is loaded into tank trucks, railcars, or marine vessels at each benzene production facility and each bulk terminal. However, specifically exempted from this regulation are loading racks at which only the following are loaded: Benzene-laden waste (covered under subpart FF of this part), gasoline, crude oil, natural gas liquids, petroleum distillates (e.g., fuel oil, diesel, or kerosene), or benzene-laden liquid from coke by-product recovery plants.

(b) Any affected facility under paragraph (a) of this section which loads only liquid containing less than 70 weight-percent benzene is exempt from the requirements of this subpart, except for the recordkeeping and reporting requirements in § 61.305(i).

(c) Any affected facility under paragraph (a) of this section shall comply with the standards in § 61.302 at each loading rack that is handling a liquid containing 70 weight-percent or more benzene.

(d) Any affected facility under paragraph (a) of this section whose annual benzene loading is less than 1.3 million liters of 70 weight-percent or more benzene is exempt from the requirements of this subpart, except for the recordkeeping and reporting requirements in § 61.305(i).

(e) The owner or operator of an affected facility, as defined in § 61.300(a) that loads a marine vessel shall be in compliance with the provisions of this subpart on and after July 23, 1991. If an affected facility that loads a marine vessel also loads a tank truck or railcar, the marine vessel loading racks shall be in compliance with the provisions of this subpart on and after July 23, 1991, while the tank truck loading racks and the railcar loading racks

shall be in compliance as required by § 61.12.

[55 FR 8341, Mar. 7, 1990, as amended at 55 FR 45804, Oct. 31, 1990]

#### § 61.301 Definitions.

As used in this subpart, all terms not defined herein shall have the meaning given them in the Act, or in subpart A or subpart V of part 61.

*Bulk terminal* means any facility which receives liquid product containing benzene by pipelines, marine vessels, tank trucks, or railcars, and loads the product for further distribution into tank trucks, railcars, or marine vessels.

*Car-sealed* means having a seal that is placed on the device used to change the position of a valve (e.g., from open to closed) such that the position of the valve cannot be changed without breaking the seal and requiring the replacement of the old seal, once broken, with a new seal.

*Control device* means all equipment used for recovering or oxidizing benzene vapors displaced from the affected facility.

*Incinerator* means any enclosed combustion device that is used for destroying organic compounds and that does not extract energy in the form of steam or process heat. These devices do not rely on the heating value of the waste gas to sustain efficient combustion. Auxiliary fuel is burned in the device and the heat from the fuel flame heats the waste gas to combustion temperature. Temperature is controlled by controlling combustion air or fuel.

*Leak* means any instrument reading of 10,000 ppmv or greater using method 21 of 40 CFR part 60, appendix A.

*Loading cycle* means the time period from the beginning of filling a tank truck, railcar, or marine vessel until flow to the control device ceases, as measured by the flow indicator.

*Loading rack* means the loading arms, pumps, meters, shutoff valves, relief valves, and other piping and valves necessary to fill tank trucks, railcars, or marine vessels.

*Marine vessel* means any tank ship or tank barge which transports liquid product such as benzene.

*Nonvapor tight* means any tank truck, railcar, or marine vessel that does not pass the required vapor-tightness test.

*Process heater* means a device that transfers heat liberated by burning fuel to fluids contained in tubes, except water that is heated to produce steam.

*Steam generating unit* means any enclosed combustion device that uses fuel energy in the form of steam.

*Vapor collection system* means any equipment located at the affected facility used for containing benzene vapors displaced during the loading of tank trucks, railcars, or marine vessels. This does not include the vapor collection system that is part of any tank truck, railcar, or marine vessel vapor collection manifold system.

*Vapor-tight marine vessel* means a marine vessel with a benzene product tank that has been demonstrated within the preceding 12 months to have no leaks. This demonstration shall be made using method 21 of part 60, appendix A, during the last 20 percent of loading and during a period when the vessel is being loaded at its maximum loading rate. A reading of greater than 10,000 ppm as methane shall constitute a leak. As an alternative, a marine vessel owner or operator may use the vapor-tightness test described in § 61.304(f) to demonstrate vapor tightness. A marine vessel operated at negative pressure is assumed to be vapor-tight for the purpose of this standard.

*Vapor-tight tank truck or vapor-tight railcar* means a tank truck or railcar for which it has been demonstrated within the preceding 12 months that its product tank will sustain a pressure change of not more than 750 pascals within 5 minutes after it is pressurized to a minimum of 4,500 pascals. This capability is to be demonstrated using the pressure test procedure specified in method 27 of part 60, appendix A, and a pressure measurement device which has a precision of  $\pm 2.5$  mm water and which is capable of measuring above the pressure at which the tank truck or railcar is to be tested for vapor tightness.

#### § 61.302 Standards.

(a) The owner or operator of an affected facility shall equip each loading

rack with a vapor collection system that is:

(1) Designed to collect all benzene vapors displaced from tank trucks, railcars, or marine vessels during loading, and

(2) Designed to prevent any benzene vapors collected at one loading rack from passing through another loading rack to the atmosphere.

(b) The owner or operator of an affected facility shall install a control device and reduce benzene emissions routed to the atmosphere through the control device by 98 weight percent. If a boiler or process heater is used to comply with the percent reduction requirement, then the vent stream shall be introduced into the flame zone of such a device.

(c) The owner or operator of an affected facility shall operate any flare used to comply with paragraph (b) of this section in accordance with the requirements of §60.18 (b) through (f).

(d) The owner or operator of an affected facility shall limit loading of benzene into vapor-tight tank trucks and vapor-tight railcars using the following procedures:

(1) The owner or operator shall obtain the vapor-tightness documentation described in §61.305(h) for each tank truck or railcar loaded at the affected facility. The test date in the documentation must be within the preceding 12 months. The vapor-tightness test to be used for tank trucks and railcars is method 27 of part 60, appendix A.

(2) The owner or operator shall cross-check the identification number for each tank truck or railcar to be loaded with the file of vapor-tightness documentation before the corresponding tank truck or railcar is loaded. If no documentation is on file, the owner or operator shall obtain a copy of the information from the tank truck or railcar operator before the tank truck or railcar is loaded.

(3) Alternate procedures to those described in paragraphs (d)(1) and (d)(2) of this section may be used upon application to, and approval by, the Administrator.

(e) The owner or operator of an affected facility shall limit the loading of marine vessels to those vessels that

are vapor tight as determined by either paragraph (e)(1), (e)(2), (e)(3), or (e)(4) of this section.

(1) The owner or operator of an affected facility shall ensure that each marine vessel is loaded with the benzene product tank below atmospheric pressure (i.e., at negative pressure). If the pressure is measured at the interface between the shoreside vapor collection pipe and the marine vessel vapor line, the pressure measured according to the procedures in §61.303(f) must be below atmospheric pressure.

(2) The owner or operator of an affected facility shall use the following procedure to obtain the vapor-tightness documentation described in §61.305(h). The vapor-tightness test for marine vessels is method 21 of part 60, appendix A, and shall be applied to any potential sources of vapor leaks. A reading of 10,000 ppmv or greater as methane shall constitute a leak.

(i) The owner or operator of an affected facility shall obtain the leak test documentation described in §61.305(h) for each marine vessel prior to loading, if available. The date of the test listed in the documentation must be within the 12 preceding months.

(ii) If there is no documentation of a successful leak test conducted on the marine vessel in the preceding 12 months, the owner or operator of an affected facility shall require that a leak test of the marine vessel be conducted during the final 20 percent of loading of the marine vessel or shall not load the vessel. The test shall be conducted when the marine vessel is being loaded at the maximum allowable loading rate.

(A) If no leak is detected, the owner or operator of an affected facility shall require that the documentation described in §61.305(h) is completed prior to departure of the vessel. The owner or operator of the affected facility shall retain a copy of the vapor-tightness documentation on file.

(B) If any leak is detected, the owner or operator of an affected facility shall require that the vapor-tightness failure be documented for the marine vessel owner or operator prior to departure of the vessel. The owner or operator of the affected facility shall retain a copy of the vapor-tightness documentation

on file. Delay of repair of equipment for which leaks have been detected will be allowed if the repair is technically infeasible without dry-docking the vessel. This equipment will be excluded from future method 21 tests until repairs are effected. Repair of this equipment shall occur the next time the vessel is dry-docked.

(iii) If the marine vessel has failed its most recent vapor-tightness test as described in §61.302(e)(2)(ii), the owner or operator of the affected facility shall require that the owner or operator of the nonvapor-tight marine vessel provide documentation that the leaks detected during the previous vapor-tightness test have been repaired, or proof that repair is technically infeasible without dry-docking the vessel. Once the repair documentation has been provided, the owner or operator may load the marine vessel. The owner or operator shall require that the vapor-tightness test described in §61.302(e)(2)(ii) be conducted during loading, and shall retain a copy of the vapor-tightness documentation on file.

(3) The owner or operator of an affected facility shall obtain a copy of the marine vessel's vapor-tightness documentation described in §61.305(h) for a test conducted within the preceding 12 months in accordance with §61.304(f).

(4) Alternate procedures to those described in paragraphs (e)(1), (e)(2) and (e)(3) of this section may be used upon application to, and approval by, the Administrator.

(f) The owner or operator of an affected facility shall limit loading of benzene to tank trucks, railcars, and marine vessels equipped with vapor collection equipment that is compatible with the affected facility's vapor collection system.

(g) The owner or operator of an affected facility shall limit loading of tank trucks, railcars, and marine vessels to tank trucks, railcars, and marine vessels whose collection systems are connected to the affected facility's vapor collection systems.

(h) The owner or operator of an affected facility shall ensure that the vapor collection and benzene loading equipment of tank trucks and railcars shall be designed and operated to pre-

vent gauge pressure in the tank truck or railcar tank from exceeding, during loading, the initial pressure the tank was pressured up to and shown to be vapor tight at during the most recent vapor-tightness test using method 27 of part 60, appendix A. This vapor-tightness test pressure is not to be exceeded when measured by the procedures specified in §61.304(c).

(i) The owner or operator of an affected facility shall ensure that no pressure-vacuum vent in the affected facility's vapor collection system for tank trucks and railcars shall begin to open at a system pressure less than the maximum pressure at which the tank truck or railcar is operated.

(j) The owner or operator of an affected facility shall ensure that the maximum normal operating pressure of the marine vessel's vapor collection equipment shall not exceed 0.8 times the relief set pressure of the pressure-vacuum vents. This level is not to be exceeded when measured by the procedures specified in §61.304(d).

(k) The owner or operator of an affected facility shall inspect the vapor collection system and the control device for detectable emissions, and shall repair any leaks detected, in accordance with §61.242-11 (e) and (f). This inspection of the vapor collection system and control device shall be done during the loading of tank trucks, railcars, or marine vessels.

(l) Vent systems that contain valves that could divert a vent stream from a control device shall have car-sealed opened all valves in the vent system from the emission source to the control device, and car-sealed closed all valves in the vent system that would lead the vent stream to the atmosphere, either directly or indirectly, bypassing the control device.

#### **§61.303 Monitoring requirements.**

(a) Each owner or operator of an affected facility that uses an incinerator to comply with the percent reduction requirement specified under §61.302(b) shall install, calibrate, maintain, and operate according to manufacturer's specifications a temperature monitoring device equipped with a continuous recorder and having an accuracy of  $\pm 1$  percent of the combustion temperature

being measured expressed in degrees Celsius or  $\pm 0.5^{\circ}\text{C}$ , whichever is greater.

(1) Where an incinerator other than a catalytic incinerator is used, the owner or operator of the affected facility shall install a temperature monitoring device in the firebox.

(2) Where a catalytic incinerator is used, the owner or operator shall install temperature monitoring devices in the gas stream immediately before and after the catalyst bed.

(b) Each owner or operator of an affected facility that uses a flare to comply with §61.302(b) shall install, calibrate, maintain, and operate according to manufacturer's specifications a heat sensing device, such as an ultraviolet beam sensor or thermocouple, at the pilot light to indicate the presence of a flame during the entire loading cycle.

(c) Each owner or operator of an affected facility that uses a steam generating unit or process heater to comply with §61.302(b) shall comply with the following requirements. Where a steam generating unit with a design heat input capacity of less than 44 MW is used to comply with §61.302(b), the owner or operator of an affected facility shall comply with paragraph (c)(1) of this section. Where a steam generating unit or process heater with a design heat input capacity of 44 MW or greater is used to comply with §61.302(b), the owner or operator of an affected facility shall comply with paragraph (c)(2) of this section.

(1) Install in the firebox, calibrate, maintain, and operate according to manufacturer's specifications a temperature monitoring device equipped with a continuous recorder and having an accuracy of  $\pm 1$  percent of the temperature being measured expressed in degrees Celsius or  $\pm 0.5^{\circ}\text{C}$ , whichever is greater, for steam generating units or process heaters of less than 44 MW design heat input capacity.

(2) Monitor and record the periods of operation of the steam generating units or process heater if the design heat input capacity of the steam generating unit or process heater is 44 MW or greater. The records must be readily available for inspection.

(d) Each owner or operator of an affected facility that uses a carbon adsorption system to comply with the

percent reduction requirement specified under §61.302(b) shall install, calibrate, maintain, and operate according to manufacturer's specifications a device that continuously indicates and records the concentration or reading of organic compounds in the outlet gas stream of each carbon adsorber bed.

(e) The owner or operator of an affected facility who wishes to demonstrate compliance with the standards specified under §61.302(b) using control devices other than an incinerator, steam generating unit, process heater, carbon adsorber, or flare shall provide the Administrator with information describing the operation of the control device and the process parameter(s) that would indicate proper operation and maintenance of the device. The Administrator may request further information and will specify appropriate monitoring procedures or requirements.

(f) Each owner or operator of an affected facility complying with §61.302(e)(1) shall install, calibrate, maintain, and operate a recording pressure measurement device (magnehelic gauge or equivalent device) and an audible and visible alarm system that is activated when the pressure vacuum specified in §61.302(e)(1) is not attained. The owner or operator shall place the alarm system so that it can be seen and heard where cargo transfer is controlled and on the open deck.

(g) Owners or operators using a vent system that contains valves that could divert a vent stream from a control device used to comply with the provisions of this subpart shall do one or a combination of the following:

(1) Install a flow indicator immediately downstream of each valve that if opened would allow a vent stream to bypass the control device and be emitted, either directly or indirectly, to the atmosphere. The flow indicator shall be capable of recording flow at least once every 15 minutes.

(2) Monitor the valves once a month, checking the position of the valves and the condition of the car seal, and identify all times when the car seals have been broken and the valve position has been changed (*i.e.*, from opened to closed for valves in the vent piping to the control device and from closed to

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open for valves that allow the stream to be vented directly or indirectly to the atmosphere).

**§ 61.304 Test methods and procedures.**

(a) The procedures for determining compliance with § 61.302(b) for all control devices other than flares is as follows:

(1) All testing equipment shall be prepared and installed as specified in the appropriate test methods.

(2) The time period for a performance test shall be not less than 6 hours, during which at least 300,000 liters of benzene are loaded. If the throughput criterion is not met during the initial 6 hours, the test may be either continued until the throughput criterion is met, or resumed the next day with at least another 6 complete hours of testing.

(3) For intermittent control devices:

(i) The vapor holder level of the intermittent control device shall be recorded at the start of the performance test. The end of the performance test shall coincide with the time when the vapor holder is at its original level.

(ii) At least two startups and shutdowns of the control device shall occur during the performance test. If this does not occur under an automatically controlled operation, the system shall be manually controlled.

(4) An emission testing interval shall consist of each 5-minute period during the performance test. For each interval:

(i) The reading from each measurement instrument shall be recorded.

(ii) Method 1 or 1A of part 60, appendix A, as appropriate, shall be used for selection of the sampling site,

(iii) The volume exhausted shall be determined using method 2, 2A, 2C, or 2D of part 60, appendix A, as appropriate.

(iv) The average benzene concentration upstream and downstream of the control device in the vent shall be determined using method 25A or method 25B of appendix A of this part, using benzene as the calibration gas. The average benzene concentration shall correspond to the volume measurement by taking into account the sampling system response time.

(5) The mass emitted during each testing interval shall be calculated as follows:

$$M_i = FKV_s C$$

where:

$M_i$ =Mass of benzene emitted during testing interval  $i$ , kg.

$V_s$ =Volume of air-vapor mixture exhausted,  $m^3$  at standard conditions.

$C$ =Benzene concentration (as measured) at the exhaust vent, ppmv.

$K$ =Density, (kg/ $m^3$  benzene), standard conditions.

$K=3.25$  for benzene.

$F$ =Conversion factor, ( $m^3$  benzene/ $m^3$  air)/(1/ppmv).

$$F = 10^{-6}$$

$s$ =Standard conditions, 20 °C and 760 mm Hg.

(6) The benzene mass emission rates before and after the control device shall be calculated as follows:

$$E = \frac{\sum_{i=1}^n M_i}{T}$$

where:

$E$ =Mass flow rate of benzene emitted, kg/hr.

$M_i$ =Mass of benzene emitted during testing interval  $i$ , kg.

$T$ =Total time of all testing intervals, hr.

$n$ =Number of testing intervals.

(7) The percent reduction across the control device shall be calculated as follows:

$$R = \frac{E_b - E_a}{E_b} (100)$$

where:

$R$ =Control efficiency of control device, %.

$E_b$ =Mass flow rate of benzene prior to control device, kg/hr.

$E_a$ =Mass flow rate of benzene after control device, kg/hr.

(b) When a flare is used to comply with § 61.302(b), a performance test according to method 22 of appendix A of this part, shall be performed to determine visible emissions. The observation period shall be at least 2 hours and shall be conducted according to method 22. Performance testing shall be conducted during at least three complete loading cycles with a separate test run for each loading cycle. The observation period for detecting visible emissions shall encompass each loading cycle. Integrated sampling to measure process

vent stream flow rate shall be performed continuously during each loading cycle.

(c) For the purpose of determining compliance with §61.302(h), the following procedures shall be used:

(1) Calibrate and install a pressure measurement device (liquid manometer, magnehelic gauge, or equivalent instrument), which has a precision of  $\pm 2.5$  mm H<sub>2</sub>O in the range that the tank truck or railcar was initially pressured to during the most recent vapor-tightness test.

(2) Connect the pressure measurement device to a pressure tap in the affected facility's vapor collection system, located as close as possible to the connection with the tank truck or railcar.

(3) During the performance test, record the pressure every 5 minutes while a tank truck or railcar is being loaded, and record the highest instantaneous pressure that occurs during each loading cycle. Every loading rack shall be tested at least once during the performance test.

(4) If more than one loading rack is used simultaneously, then the performance test shall be conducted simultaneously to represent the maximum capacity.

(d) For the purpose of determining compliance with §61.302(j), the following procedures shall be used:

(1) Calibrate and install a pressure measurement device (liquid manometer, magnehelic gauge, or equivalent instrument), capable of measuring up to the relief set pressure of the pressure-vacuum vents.

(2) Connect the pressure measurement device to a pressure tap in the affected facility's vapor collection system, located as close as possible to the connection with the marine vessel.

(3) During the performance test, record the pressure every 5 minutes while a marine vessel is being loaded, and record the highest instantaneous pressure that occurs during each loading cycle.

(e) Immediately prior to a performance test required for determination of compliance with §61.302(b), all potential sources of vapor leakage in the affected facility's vapor collection system equipment shall be inspected for

detectable emissions as required in §61.302(k). The monitoring shall be conducted only while a vapor-tight tank truck, railcar, or marine vessel is being loaded. All identified leaks in the terminal's vapor collection system shall be repaired prior to conducting the performance test.

(f) The following test method shall be used to comply with the marine vessel vapor-tightness requirements of §61.302(e)(3):

(1) Each benzene product tank shall be pressurized with dry air or inert gas to not less than 1.0 psig and not more than the pressure of the lowest relief valve setting.

(2) Once the pressure is obtained, the dry air or inert gas source shall be shut off.

(3) At the end of one-half hour, the pressure in the benzene product tank and piping shall be measured. The change in pressure shall be calculated using the following formula:

$$\Delta P = P_i - P_f$$

where:

$\Delta P$  = Change in pressure, inches of water.

$P_i$  = Pressure in tank when air/gas source is shut off, inches of water.

$P_f$  = Pressure in tank at the end of one-half hour after air/gas source is shut off, inches of water.

(4) The change in pressure,  $\Delta P$ , shall be compared to the pressure drop calculated using the following formula:

$$\Delta P_M = 0.861 P_{ia} L/V$$

where:

$\Delta P_M$  = Maximum allowable pressure change, inches of water.

$P_{ia}$  = Pressure in tank when air/gas source is shut off, pounds per square inch, absolute (psia).

$L$  = Maximum permitted loading rate of vessel, barrels per hour.

$V$  = Total volume of product tank, barrels.

(5) If  $\Delta P \leq \Delta P_M$ , the vessel is vapor tight.

(6) If  $\Delta P > \Delta P_M$ , the vessel is not vapor tight and the source of the leak must be identified and repaired prior to re-testing.

[55 FR 8341, Mar. 7, 1990; 55 FR 12444, Apr. 3, 1990]

**§61.305 Reporting and recordkeeping.**

(a) Each owner or operator of an affected facility subject to the provisions of this subpart shall keep an up-to-

date, readily accessible record of the following data measured during each performance test, and also include the following data in the report of the initial performance test required under §61.13. Where a steam generating unit or process heater with a design heat input capacity of 44 MW or greater is used to comply with §61.302(b), a report containing performance test data need not be submitted, but a report containing the information in §61.305(a)(3)(i) is required.

(1) Where an owner or operator subject to the provisions of this subpart is complying with §61.302(b) through use of an incinerator:

(i) The average firebox temperature of the incinerator (or the average temperature upstream and downstream of the catalyst bed), measured at least every 2 minutes during a loading cycle if the total time period of the loading cycle is less than 3 hours and every 15 minutes if the total time period of the loading cycle is equal to or greater than 3 hours. The measured temperature shall be averaged over the loading cycle.

(ii) The percent reduction of benzene determined as specified in §61.304(a) achieved by the incinerator.

(iii) The duration of the loading cycle.

(2) Where an owner or operator subject to the provisions of this subpart is complying with §61.302 (b) and (c) through use of a smokeless flare or other flare design (i.e., steam-assisted, air-assisted or nonassisted), all visible emission readings, heat content determination, flow rate measurements, maximum permitted velocity calculations, and exit velocity determinations made during the performance test, continuous records of the flare pilot flame monitoring measured continuously during the loading cycle, duration of all loading cycles and records of all loading cycles during which the pilot flame is absent for each vent stream.

(3) Where an owner or operator subject to the provisions of this subpart is complying with §61.302(b) through the use of a steam generating unit or process heater:

(i) A description of the location at which the vent stream is introduced

into the steam generating unit or process heater.

(ii) The average combustion temperature of the steam generating unit or process heater with a design heat input capacity of less than 44 MW measured at least every 2 minutes during a loading cycle if the total time period of the loading cycle is less than 3 hours and every 15 minutes if the total time period of the loading cycle is equal to or greater than 3 hours. The measured temperature shall be averaged over the loading cycle.

(iii) The duration of the loading cycle.

(4) Where an owner or operator subject to the provisions of this subpart is complying with §61.302(b) through the use of a carbon adsorption system, the control efficiency, R, of the carbon adsorption system, and all supporting performance test data and calculations used to determine that value.

(5) Each owner or operator subject to the provisions of this subpart shall submit with the initial performance test an engineering report describing in detail the vent system used to vent each affected vent stream to a control device. This report shall include all valves and vent pipes that could vent the stream to the atmosphere, thereby bypassing the control device, and identify which valves are car-sealed opened and which valves are car-sealed closed.

(b) Each owner or operator subject to the provisions of this subpart shall keep up-to-date, readily accessible continuous records of the equipment operating parameters specified to be monitored under §61.303 (a), (c), and (d) as well as up-to-date, readily accessible records of periods of operation during which the parameter boundaries established during the most recent performance test are exceeded. The Administrator may at any time require a report of these data. Periods of operation during which the parameter boundaries established during the most recent performance tests are exceeded are defined as follows:

(1) For thermal incinerators, all loading cycles during which the average combustion temperature was more than 28°C below the average loading cycle combustion temperature during the most recent performance test at

which compliance with §61.302(b) was determined.

(2) For catalytic incinerators, all loading cycles during which the average temperature of the vent stream immediately before the catalyst bed is more than 28°C below the average temperature of the process vent stream during loading cycles during the most recent performance test at which compliance with §61.302(b) was determined.

(3) All loading cycles during which the average combustion temperature was more than 28°C below the average combustion temperature during the most recent performance test at which compliance with §61.302(b) was determined for steam generating units or process heaters with a design heat input capacity of less than 44 MW.

(4) For steam generating units or process heaters, whenever there is a change in the location at which the vent stream is introduced into the flame zone as required under §61.302(b).

(5) For carbon adsorbers, all 3-hour periods of operation during which the average VOC concentration or reading of organics in the exhaust gases is more than 20 percent greater than the average exhaust gas concentration or reading measured by the organics monitoring device during the most recent determination of the recovery efficiency of the carbon adsorber that demonstrated that the facility was in compliance.

(c) If a vent system containing valves that could divert the emission stream away from the control device is used, each owner or operator subject to the provisions of this subpart shall keep for at least 2 years up-to-date, readily accessible continuous records of:

(1) All periods when flow is indicated if flow indicators are installed under §61.303(g)(1).

(2) All times when maintenance is performed on car-sealed valves, when the car seal is broken, and when the valve position is changed (i.e., from open to closed for valves in the vent piping to the control device and from closed to open for valves that vent the stream directly or indirectly to the atmosphere bypassing the control device) if valves are monitored under §60.303(g)(2).

(d) Each owner or operator of an affected facility subject to the provisions of this subpart who uses a steam generating unit or process heater with a design heat input capacity of 44 MW or greater to comply with §61.302(b) shall keep an up-to-date, readily accessible record of all periods of operation of the steam generating unit or process heater. Examples of such records could include records of steam use, fuel use, or monitoring data collected pursuant to other State or Federal regulatory requirements.

(e) Each owner or operator of an affected facility subject to the provisions of this subpart shall keep up-to-date, readily accessible records of the flare pilot flame monitoring specified under §61.303(b), as well as up-to-date, readily accessible records of any absence of the pilot flame during a loading cycle.

(f) Each owner or operator of an affected facility subject to the requirements of §61.302 shall submit to the Administrator quarterly reports of the following information. The owner or operator shall submit the initial report within 90 days after the effective date of this subpart or 90 days after startup for a source that has an initial startup date after the effective date.

(1) Periods of operation where there were exceedances of monitored parameters recorded under §61.305(b).

(2) All periods recorded under §61.305(c)(1) when the vent stream is diverted from the control device.

(3) All periods recorded under §61.305(d) when the steam generating unit or process heater was not operating.

(4) All periods recorded under §61.305(e) in which the pilot flame of the flare was absent.

(5) All times recorded under §61.305(c)(2) when maintenance is performed on car-sealed valves, when the car seal is broken, and when the valve position is changed.

(g) The owner or operator of an affected facility shall keep the vapor-tightness documentation required under §61.302 (d) and (e) on file at the affected facility in a permanent form available for inspection.

(h) The owner or operator of an affected facility shall update the documentation file required under §61.302

(d) and (e) for each tank truck, railcar, or marine vessel at least once per year to reflect current test results as determined by the appropriate method. The owner or operator shall include, as a minimum, the following information in this documentation:

- (1) Test title;
- (2) Tank truck, railcar, or marine vessel owner and address;
- (3) Tank truck, railcar, or marine vessel identification number;
- (4) Testing location;
- (5) Date of test;
- (6) Tester name and signature;
- (7) Witnessing inspector: name, signature, and affiliation; and
- (8) Test results, including, for railcars and tank trucks, the initial pressure up to which the tank was pressured at the start of the test.
  - (i) Each owner or operator of an affected facility complying with §61.300(b) or §61.300(d) shall record the following information. The first year after promulgation the owner or operator shall submit a report containing the requested information to the Director of the Emission Standards Division, (MD-13), U.S. Environmental Protection Agency, Research Triangle Park, North Carolina 27711. After the first year, the owner or operator shall continue to record; however, no reporting is required. The information shall be made available if requested. The information shall include, as a minimum:
    - (1) The affected facility's name and address;
    - (2) The weight percent of the benzene loaded;
    - (3) The type of vessel loaded (i.e., tank truck, railcar, or marine vessel); and
    - (4) The annual amount of benzene loaded into each type of vessel.

**§61.306 Delegation of authority.**

- (a) In delegating implementation and enforcement authority to a State under section 112(d) of the Act, the authorities contained in paragraph (b) of this section shall be retained by the Administrator and not transferred to a State.
- (b) Authorities which will not be delegated to States: No restrictions.

**Subparts CC-EE—[Reserved]**

**Subpart FF—National Emission Standard for Benzene Waste Operations**

SOURCE: 55 FR 8346, Mar. 7, 1990, unless otherwise noted.

**§61.340 Applicability.**

- (a) The provisions of this subpart apply to owners and operators of chemical manufacturing plants, coke by-product recovery plants, and petroleum refineries.
- (b) The provisions of this subpart apply to owners and operators of hazardous waste treatment, storage, and disposal facilities that treat, store, or dispose of hazardous waste generated by any facility listed in paragraph (a) of this section. The waste streams at hazardous waste treatment, storage, and disposal facilities subject to the provisions of this subpart are the benzene-containing hazardous waste from any facility listed in paragraph (a) of this section. A hazardous waste treatment, storage, and disposal facility is a facility that must obtain a hazardous waste management permit under subtitle C of the Solid Waste Disposal Act.
- (c) At each facility identified in paragraph (a) or (b) of this section, the following waste is exempt from the requirements of this subpart:
  - (1) Waste in the form of gases or vapors that is emitted from process fluids;
  - (2) Waste that is contained in a segregated stormwater sewer system.

[55 FR 8346, Mar. 7, 1990, as amended at 55 FR 37231, Sept. 10, 1990; 58 FR 3095, Jan. 7, 1993]

**§61.341 Definitions.**

*Benzene concentration* means the fraction by weight of benzene in a waste as determined in accordance with the procedures specified in §61.355 of this subpart.

*Car-seal* means a seal that is placed on a device that is used to change the position of a valve (e.g., from opened to closed) in such a way that the position of the valve cannot be changed without breaking the seal.

*Chemical manufacturing plant* means any facility engaged in the production

of chemicals by chemical, thermal, physical, or biological processes for use as a product, co-product, by-product, or intermediate including but not limited to industrial organic chemicals, organic pesticide products, pharmaceutical preparations, paint and allied products, fertilizers, and agricultural chemicals. Examples of chemical manufacturing plants include facilities at which process units are operated to produce one or more of the following chemicals: benzenesulfonic acid, benzene, chlorobenzene, cumene, cyclohexane, ethylene, ethylbenzene, hydroquinone, linear alkylbenzene, nitrobenzene, resorcinol, sulfolane, or styrene.

*Closed-vent system* means a system that is not open to the atmosphere and is composed of piping, ductwork, connections, and, if necessary, flow inducing devices that transport gas or vapor from an emission source to a control device.

*Coke by-product recovery plant* means any facility designed and operated for the separation and recovery of coal tar derivatives (by-products) evolved from coal during the coking process of a coke oven battery.

*Container* means any portable waste management unit in which a material is stored, transported, treated, or otherwise handled. Examples of containers are drums, barrels, tank trucks, barges, dumpsters, tank cars, dump trucks, and ships.

*Control device* means an enclosed combustion device, vapor recovery system, or flare.

*Cover* means a device or system which is placed on or over a waste placed in a waste management unit so that the entire waste surface area is enclosed and sealed to minimize air emissions. A cover may have openings necessary for operation, inspection, and maintenance of the waste management unit such as access hatches, sampling ports, and gauge wells provided that each opening is closed and sealed when not in use. Example of covers include a fixed roof installed on a tank, a lid installed on a container, and an air-supported enclosure installed over a waste management unit.

*External floating roof* means a pontoon-type or double-deck type cover

with certain rim sealing mechanisms that rests on the liquid surface in a waste management unit with no fixed roof.

*Facility* means all process units and product tanks that generate waste within a stationary source, and all waste management units that are used for waste treatment, storage, or disposal within a stationary source.

*Fixed roof* means a cover that is mounted on a waste management unit in a stationary manner and that does not move with fluctuations in liquid level.

*Floating roof* means a cover with certain rim sealing mechanisms consisting of a double deck, pontoon single deck, internal floating cover or covered floating roof, which rests upon and is supported by the liquid being contained, and is equipped with a closure seal or seals to close the space between the roof edge and unit wall.

*Flow indicator* means a device which indicates whether gas flow is present in a line or vent system.

*Individual drain system* means the system used to convey waste from a process unit, product storage tank, or waste management unit to a waste management unit. The term includes all process drains and common junction boxes, together with their associated sewer lines and other junction boxes, down to the receiving waste management unit.

*Internal floating roof* means a cover that rests or floats on the liquid surface inside a waste management unit that has a fixed roof.

*Liquid-mounted seal* means a foam or liquid-filled primary seal mounted in contact with the liquid between the waste management unit wall and the floating roof continuously around the circumference.

*Loading* means the introduction of waste into a waste management unit but not necessarily to complete capacity (also referred to as filling).

*Maximum organic vapor pressure* means the equilibrium partial pressure exerted by the waste at the temperature equal to the highest calendar-month average of the waste storage temperature for waste stored above or below the ambient temperature or at the local maximum monthly average

temperature as reported by the National Weather Service for waste stored at the ambient temperature, as determined:

- (1) In accordance with § 60.17(c); or
- (2) As obtained from standard reference texts; or
- (3) In accordance with § 60.17(a)(37); or
- (4) Any other method approved by the Administrator.

*No detectable emissions* means less than 500 parts per million by volume (ppmv) above background levels, as measured by a detection instrument reading in accordance with the procedures specified in § 61.355(h) of this subpart.

*Oil-water separator* means a waste management unit, generally a tank or surface impoundment, used to separate oil from water. An oil-water separator consists of not only the separation unit but also the forebay and other separator basins, skimmers, weirs, grit chambers, sludge hoppers, and bar screens that are located directly after the individual drain system and prior to additional treatment units such as an air flotation unit, clarifier, or biological treatment unit. Examples of an oil-water separator include an API separator, parallel-plate interceptor, and corrugated-plate interceptor with the associated ancillary equipment.

*Petroleum refinery* means any facility engaged in producing gasoline, kerosene, distillate fuel oils, residual fuel oils, lubricants, or other products through the distillation of petroleum, or through the redistillation, cracking, or reforming of unfinished petroleum derivatives.

*Petroleum* means the crude oil removed from the earth and the oils derived from tar sands, shale, and coal.

*Point of waste generation* means the location where the waste stream exits the process unit component or storage tank prior to handling or treatment in an operation that is not an integral part of the production process, or in the case of waste management units that generate new wastes after treatment, the location where the waste stream exits the waste management unit component.

*Process unit* means equipment assembled and connected by pipes or ducts to produce intermediate or final products.

A process unit can be operated independently if supplied with sufficient fuel or raw materials and sufficient product storage facilities.

*Process unit turnaround* means the shutting down of the operations of a process unit, the purging of the contents of the process unit, the maintenance or repair work, followed by re-starting of the process.

*Process unit turnaround waste* means a waste that is generated as a result of a process unit turnaround.

*Process wastewater* means water which comes in contact with benzene during manufacturing or processing operations conducted within a process unit. Process wastewater is not organic wastes, process fluids, product tank drawdown, cooling tower blowdown, steam trap condensate, or landfill leachate.

*Process wastewater stream* means a waste stream that contains only process wastewater.

*Product tank* means a stationary unit that is designed to contain an accumulation of materials that are fed to or produced by a process unit, and is constructed primarily of non-earthen materials (e.g., wood, concrete, steel, plastic) which provide structural support.

*Product tank drawdown* means any material or mixture of materials discharged from a product tank for the purpose of removing water or other contaminants from the product tank.

*Segregated stormwater sewer system* means a drain and collection system designed and operated for the sole purpose of collecting rainfall runoff at a facility, and which is segregated from all other individual drain systems.

*Sewer line* means a lateral, trunk line, branch line, or other enclosed conduit used to convey waste to a downstream waste management unit.

*Slop oil* means the floating oil and solids that accumulate on the surface of an oil-water separator.

*Sour water stream* means a stream that:

- (1) Contains ammonia or sulfur compounds (usually hydrogen sulfide) at concentrations of 10 ppm by weight or more;
- (2) is generated from separation of water from a feed stock, intermediate,

or product that contained ammonia or sulfur compounds; and

(3) requires treatment to remove the ammonia or sulfur compounds.

*Sour water stripper* means a unit that:

(1) Is designed and operated to remove ammonia or sulfur compounds (usually hydrogen sulfide) from sour water streams;

(2) has the sour water streams transferred to the stripper through hard piping or other enclosed system; and

(3) is operated in such a manner that the offgases are sent to a sulfur recovery unit, processing unit, incinerator, flare, or other combustion device.

*Surface impoundment* means a waste management unit which is a natural topographic depression, man-made excavation, or diked area formed primarily of earthen materials (although it may be lined with man-made materials), which is designed to hold an accumulation of liquid wastes or waste containing free liquids, and which is not an injection well. Examples of surface impoundments are holding, storage, settling, and aeration pits, ponds, and lagoons.

*Tank* means a stationary waste management unit that is designed to contain an accumulation of waste and is constructed primarily of nonearthen materials (e.g., wood, concrete, steel, plastic) which provide structural support.

*Treatment process* means a stream stripping unit, thin-film evaporation unit, waste incinerator, or any other process used to comply with §61.348 of this subpart.

*Vapor-mounted seal* means a foam-filled primary seal mounted continuously around the perimeter of a waste management unit so there is an annular vapor space underneath the seal. The annular vapor space is bounded by the bottom of the primary seal, the unit wall, the liquid surface, and the floating roof.

*Waste* means any material resulting from industrial, commercial, mining or agricultural operations, or from community activities that is discarded or is being accumulated, stored, or physically, chemically, thermally, or biologically treated prior to being discarded, recycled, or discharged.

*Waste management unit* means a piece of equipment, structure, or transport mechanism used in handling, storage, treatment, or disposal of waste. Examples of a waste management unit include a tank, surface impoundment, container, oil-water separator, individual drain system, steam stripping unit, thin-film evaporation unit, waste incinerator, and landfill.

*Waste stream* means the waste generated by a particular process unit, product tank, or waste management unit. The characteristics of the waste stream (e.g., flow rate, benzene concentration, water content) are determined at the point of waste generation. Examples of a waste stream include process wastewater, product tank drawdown, sludge and slop oil removed from waste management units, and landfill leachate.

*Wastewater treatment system* means any component, piece of equipment, or installation that receives, manages, or treats process wastewater, product tank drawdown, or landfill leachate prior to direct or indirect discharge in accordance with the National Pollutant Discharge Elimination System permit regulations under 40 CFR part 122. These systems typically include individual drain systems, oil-water separators, air flotation units, equalization tanks, and biological treatment units.

*Water seal controls* means a seal pot, p-leg trap, or other type of trap filled with water (e.g., flooded sewers that maintain water levels adequate to prevent air flow through the system) that creates a water barrier between the sewer line and the atmosphere. The water level of the seal must be maintained in the vertical leg of a drain in order to be considered a water seal.

[55 FR 8346, Mar. 7, 1990; 55 FR 12444, Apr. 3, 1990, as amended at 58 FR 3095, Jan. 7, 1993]

#### §61.342 Standards: General.

(a) An owner or operator of a facility at which the total annual benzene quantity from facility waste is less than 10 megagrams per year (Mg/yr) shall be exempt from the requirements of paragraphs (b) and (c) of this section. The total annual benzene quantity from facility waste is the sum of the annual benzene quantity for each waste stream at the facility that has a

flow-weighted annual average water content greater than 10 percent or that is mixed with water, or other wastes, at any time and the mixture has an annual average water content greater than 10 percent. The benzene quantity in a waste stream is to be counted only once without multiple counting if other waste streams are mixed with or generated from the original waste stream. Other specific requirements for calculating the total annual benzene waste quantity are as follows:

(1) Wastes that are exempted from control under §§61.342(c)(2) and 61.342(c)(3) are included in the calculation of the total annual benzene quantity if they have an annual average water content greater than 10 percent, or if they are mixed with water or other wastes at any time and the mixture has an annual average water content greater than 10 percent.

(2) The benzene in a material subject to this subpart that is sold is included in the calculation of the total annual benzene quantity if the material has an annual average water content greater than 10 percent.

(3) Benzene in wastes generated by remediation activities conducted at the facility, such as the excavation of contaminated soil, pumping and treatment of groundwater, and the recovery of product from soil or groundwater, are not included in the calculation of total annual benzene quantity for that facility. If the facility's total annual benzene quantity is 10 Mg/yr or more, wastes generated by remediation activities are subject to the requirements of paragraphs (c) through (h) of this section. If the facility is managing remediation waste generated offsite, the benzene in this waste shall be included in the calculation of total annual benzene quantity in facility waste, if the waste streams have an annual average water content greater than 10 percent, or if they are mixed with water or other wastes at any time and the mixture has an annual average water content greater than 10 percent.

(4) The total annual benzene quantity is determined based upon the quantity of benzene in the waste before any waste treatment occurs to remove the benzene except as specified in §61.355(c)(1)(i) (A) through (C).

(b) Each owner or operator of a facility at which the total annual benzene quantity from facility waste is equal to or greater than 10 Mg/yr as determined in paragraph (a) of this section shall be in compliance with the requirements of paragraphs (c) through (h) of this section no later than 90 days following the effective date, unless a waiver of compliance has been obtained under §61.11, or by the initial startup for a new source with an initial startup after the effective date.

(1) The owner or operator of an existing source unable to comply with the rule within the required time may request a waiver of compliance under §61.10.

(2) As part of the waiver application, the owner or operator shall submit to the Administrator a plan under §61.10(b)(3) that is an enforceable commitment to obtain environmental benefits to mitigate the benzene emissions that result from extending the compliance date. The plan shall include the following information:

(i) A description of the method of compliance, including the control approach, schedule for installing controls, and quantity of the benzene emissions that result from extending the compliance date;

(ii) If the control approach involves a compliance strategy designed to obtain integrated compliance with multiple regulatory requirements, a description of the other regulations involved and their effective dates; and

(iii) A description of the actions to be taken at the facility to obtain mitigating environmental benefits, including how the benefits will be obtained, the schedule for these actions, and an estimate of the quantifiable benefits that directly result from these actions.

(c) Each owner or operator of a facility at which the total annual benzene quantity from facility waste is equal to or greater than 10 Mg/yr as determined in paragraph (a) of this section shall manage and treat the facility waste as follows:

(1) For each waste stream that contains benzene, including (but not limited to) organic waste streams that contain less than 10 percent water and aqueous waste streams, even if the

wastes are not discharged to an individual drain system, the owner or operator shall:

(i) Remove or destroy the benzene contained in the waste using a treatment process or wastewater treatment system that complies with the standards specified in §61.348 of this subpart.

(ii) Comply with the standards specified in §§61.343 through 61.347 of this subpart for each waste management unit that receives or manages the waste stream prior to and during treatment of the waste stream in accordance with paragraph (c)(1)(i) of this section.

(iii) Each waste management unit used to manage or treat waste streams that will be recycled to a process shall comply with the standards specified in §§61.343 through 61.347. Once the waste stream is recycled to a process, including to a tank used for the storage of production process feed, product, or product intermediates, unless this tank is used primarily for the storage of wastes, the material is no longer subject to paragraph (c) of this section.

(2) A waste stream is exempt from paragraph (c)(1) of this section provided that the owner or operator demonstrates initially and, thereafter, at least once per year that the flow-weighted annual average benzene concentration for the waste stream is less than 10 ppmw as determined by the procedures specified in §61.355(c)(2) or §61.355(c)(3).

(3) A waste stream is exempt from paragraph (c)(1) of this section provided that the owner or operator demonstrates initially and, thereafter, at least once per year that the conditions specified in either paragraph (c)(3)(i) or (c)(3)(ii) of this section are met.

(i) The waste stream is process wastewater that has a flow rate less than 0.02 liters per minute or an annual wastewater quantity of less than 10 Mg/yr; or

(ii) All of the following conditions are met:

(A) The owner or operator does not choose to exempt process wastewater under paragraph (c)(3)(i) of this section.

(B) The total annual benzene quantity in all waste streams chosen for exemption in paragraph (c)(3)(ii) of this

section does not exceed 2.0 Mg/yr as determined in the procedures in §61.355(j), and

(C) The total annual benzene quantity in a waste stream chosen for exemption, including process unit turnaround waste, is determined for the year in which the waste is generated.

(d) As an alternative to the requirements specified in paragraphs (c) and (e) of this section, an owner or operator of a facility at which the total annual benzene quantity from facility waste is equal to or greater than 10 Mg/yr as determined in paragraph (a) of this section may elect to manage and treat the facility waste as follows:

(1) The owner or operator shall manage and treat facility waste other than process wastewater in accordance with the requirements of paragraph (c)(1) of this section.

(2) The owner or operator shall manage and treat process wastewater in accordance with the following requirements:

(i) Process wastewater shall be treated to achieve a total annual benzene quantity from facility process wastewater less than 1 Mg/yr. Total annual benzene from facility process wastewater shall be determined by adding together the annual benzene quantity at the point of waste generation for each untreated process wastewater stream plus the annual benzene quantity exiting the treatment process for each process wastewater stream treated in accordance with the requirements of paragraph (c)(1)(i) of this section.

(ii) Each treated process wastewater stream identified in paragraph (d)(2)(i) of this section shall be managed and treated in accordance with paragraph (c)(1) of this section.

(iii) Each untreated process wastewater stream identified in paragraph (d)(2)(i) of this section is exempt from the requirements of paragraph (c)(1) of this section.

(e) As an alternative to the requirements specified in paragraphs (c) and (d) of this section, an owner or operator of a facility at which the total annual benzene quantity from facility waste is equal to or greater than 10 Mg/yr as determined in paragraph (a) of this section may elect to manage and treat the facility waste as follows:

(1) The owner or operator shall manage and treat facility waste with a flow-weighted annual average water content of less than 10 percent in accordance with the requirements of paragraph (c)(1) of this section; and

(2) The owner or operator shall manage and treat facility waste (including remediation and process unit turn-around waste) with a flow-weighted annual average water content of 10 percent or greater, on a volume basis as total water, and each waste stream that is mixed with water or wastes at any time such that the resulting mixture has an annual water content greater than 10 percent, in accordance with the following:

(i) The benzene quantity for the wastes described in paragraph (e)(2) of this section must be equal to or less than 6.0 Mg/yr, as determined in §61.355(k). Wastes as described in paragraph (e)(2) of this section that are transferred offsite shall be included in the determination of benzene quantity as provided in §61.355(k). The provisions of paragraph (f) of this section shall not apply to any owner or operator who elects to comply with the provisions of paragraph (e) of this section.

(ii) The determination of benzene quantity for each waste stream defined in paragraph (e)(2) of this section shall be made in accordance with §61.355(k).

(f) Rather than treating the waste onsite, an owner or operator may elect to comply with paragraph (c)(1)(i) of this section by transferring the waste offsite to another facility where the waste is treated in accordance with the requirements of paragraph (c)(1)(i) of this section. The owner or operator transferring the waste shall:

(1) Comply with the standards specified in §§61.343 through 61.347 of this subpart for each waste management unit that receives or manages the waste prior to shipment of the waste offsite.

(2) Include with each offsite waste shipment a notice stating that the waste contains benzene which is required to be managed and treated in accordance with the provisions of this subpart.

(g) Compliance with this subpart will be determined by review of facility records and results from tests and in-

spections using methods and procedures specified in §61.355 of this subpart.

(h) Permission to use an alternative means of compliance to meet the requirements of §§61.342 through 61.352 of this subpart may be granted by the Administrator as provided in §61.353 of this subpart.

[55 FR 8346, Mar. 7, 1990, as amended at 58 FR 3095, Jan. 7, 1993]

#### §61.343 Standards: Tanks.

(a) Except as provided in paragraph (b) of this section and in §61.351, the owner or operator shall meet the following standards for each tank in which the waste stream is placed in accordance with §61.342 (c)(1)(ii). The standards in this section apply to the treatment of the waste stream in a tank, including dewatering.

(1) The owner or operator shall install, operate, and maintain a fixed-roof and closed-vent system that routes all organic vapors vented from the tank to a control device.

(i) The fixed-roof shall meet the following requirements:

(A) The cover and all openings (e.g., access hatches, sampling ports, and gauge wells) shall be designed to operate with no detectable emissions as indicated by an instrument reading of less than 500 ppmv above background, as determined initially and thereafter at least once per year by the methods specified in §61.355(h) of this subpart.

(B) Each opening shall be maintained in a closed, sealed position (e.g., covered by a lid that is gasketed and latched) at all times that waste is in the tank except when it is necessary to use the opening for waste sampling or removal, or for equipment inspection, maintenance, or repair.

(C) If the cover and closed-vent system operate such that the tank is maintained at a pressure less than atmospheric pressure, then paragraph (a)(1)(i)(B) of this section does not apply to any opening that meets all of the following conditions:

(1) The purpose of the opening is to provide dilution air to reduce the explosion hazard;

(2) The opening is designed to operate with no detectable emissions as indicated by an instrument reading of less

than 500 ppmv above background, as determined initially and thereafter at least once per year by the methods specified in §61.355(h); and

(3) The pressure is monitored continuously to ensure that the pressure in the tank remains below atmospheric pressure.

(ii) The closed-vent system and control device shall be designed and operated in accordance with the requirements of §61.349 of this subpart.

(b) For a tank that meets all the conditions specified in paragraph (b)(1) of this section, the owner or operator may elect to comply with paragraph (b)(2) of this section as an alternative to the requirements specified in paragraph (a)(1) of this section.

(1) The waste managed in the tank complying with paragraph (b)(2) of this section shall meet all of the following conditions:

(i) Each waste stream managed in the tank must have a flow-weighted annual average water content less than or equal to 10 percent water, on a volume basis as total water.

(ii) The waste managed in the tank either:

(A) Has a maximum organic vapor pressure less than 5.2 kilopascals (kPa) (0.75 pounds per square inch (psi));

(B) Has a maximum organic vapor pressure less than 27.6 kPa (4.0 psi) and is managed in a tank having design capacity less than 151 m<sup>3</sup> (40,000 gal); or

(C) Has a maximum organic vapor pressure less than 76.6 kPa (11.1 psi) and is managed in a tank having a design capacity less than 75 m<sup>3</sup> (20,000 gal).

(2) The owner or operator shall install, operate, and maintain a fixed roof as specified in paragraph (a)(1)(i).

(3) For each tank complying with paragraph (b) of this section, one or more devices which vent directly to the atmosphere may be used on the tank provided each device remains in a closed, sealed position during normal operations except when the device needs to open to prevent physical damage or permanent deformation of the tank or cover resulting from filling or emptying the tank, diurnal temperature changes, atmospheric pressure changes or malfunction of the unit in accordance with good engineering and

safety practices for handling flammable, explosive, or other hazardous materials.

(c) Each fixed-roof, seal, access door, and all other openings shall be checked by visual inspection initially and quarterly thereafter to ensure that no cracks or gaps occur and that access doors and other openings are closed and gasketed properly.

(d) Except as provided in §61.350 of this subpart, when a broken seal or gasket or other problem is identified, or when detectable emissions are measured, first efforts at repair shall be made as soon as practicable, but not later than 45 calendar days after identification.

[55 FR 8346, Mar. 7, 1990, as amended at 55 FR 18331, May 2, 1990; 58 FR 3096, Jan. 7, 1993]

#### §61.344 Standards: Surface impoundments.

(a) The owner or operator shall meet the following standards for each surface impoundment in which waste is placed in accordance with §61.342(c)(1)(ii) of this subpart:

(1) The owner or operator shall install, operate, and maintain on each surface impoundment a cover (e.g., air-supported structure or rigid cover) and closed-vent system that routes all organic vapors vented from the surface impoundment to a control device.

(i) The cover shall meet the following requirements:

(A) The cover and all openings (e.g., access hatches, sampling ports, and gauge wells) shall be designed to operate with no detectable emissions as indicated by an instrument reading of less than 500 ppmv above background, initially and thereafter at least once per year by the methods specified in §61.355(h) of this subpart.

(B) Each opening shall be maintained in a closed, sealed position (e.g., covered by a lid that is gasketed and latched) at all times that waste is in the surface impoundment except when it is necessary to use the opening for waste sampling or removal, or for equipment inspection, maintenance, or repair.

(C) If the cover and closed-vent system operate such that the enclosure of

the surface impoundment is maintained at a pressure less than atmospheric pressure, then paragraph (a)(1)(i)(B) of this section does not apply to any opening that meets all of the following conditions:

(1) The purpose of the opening is to provide dilution air to reduce the explosion hazard;

(2) The opening is designed to operate with no detectable emissions as indicated by an instrument reading of less than 500 ppmv above background, as determined initially and thereafter at least once per year by the methods specified in §61.355(h) of this subpart; and

(3) The pressure is monitored continuously to ensure that the pressure in the enclosure of the surface impoundment remains below atmospheric pressure.

(D) The cover shall be used at all times that waste is placed in the surface impoundment except during removal of treatment residuals in accordance with 40 CFR 268.4 or closure of the surface impoundment in accordance with 40 CFR 264.228. (Note: the treatment residuals generated by these activities may be subject to the requirements of this part.)

(ii) The closed-vent system and control device shall be designed and operated in accordance with §61.349 of this subpart.

(b) Each cover seal, access hatch, and all other openings shall be checked by visual inspection initially and quarterly thereafter to ensure that no cracks or gaps occur and that access hatches and other openings are closed and gasketed properly.

(c) Except as provided in §61.350 of this subpart, when a broken seal or gasket or other problem is identified, or when detectable emissions are measured, first efforts at repair shall be made as soon as practicable, but not later than 15 calendar days after identification.

[55 FR 8346, Mar. 7, 1990, as amended at 58 FR 3097, Jan. 7, 1993]

#### §61.345 Standards: Containers.

(a) The owner or operator shall meet the following standards for each container in which waste is placed in ac-

cordance with §61.342(c)(1)(ii) of this subpart:

(1) The owner or operator shall install, operate, and maintain a cover on each container used to handle, transfer, or store waste in accordance with the following requirements:

(i) The cover and all openings (e.g., bungs, hatches, and sampling ports) shall be designed to operate with no detectable emissions as indicated by an instrument reading of less than 500 ppmv above background, initially and thereafter at least once per year by the methods specified in §61.355(h) of this subpart.

(ii) Except as provided in paragraph (a)(4) of this section, each opening shall be maintained in a closed, sealed position (e.g., covered by a lid that is gasketed and latched) at all times that waste is in the container except when it is necessary to use the opening for waste loading, removal, inspection, or sampling.

(2) When a waste is transferred into a container by pumping, the owner or operator shall perform the transfer using a submerged fill pipe. The submerged fill pipe outlet shall extend to within two fill pipe diameters of the bottom of the container while the container is being loaded. During loading of the waste, the cover shall remain in place and all openings shall be maintained in a closed, sealed position except for those openings required for the submerged fill pipe, those openings required for venting of the container to prevent physical damage or permanent deformation of the container or cover, and any openings complying with paragraph (a)(4) of this section.

(3) Treatment of a waste in a container, including aeration, thermal or other treatment, shall be performed by the owner or operator in a manner such that whenever it is necessary for the container to be open while the waste is being treated, the container is located under a cover (e.g. enclosure) with a closed-vent system that routes all organic vapors vented from the container to a control device, except for cover and closed-vent systems that meet the requirements in paragraph (a)(4) of this section.

(i) The cover and all openings (e.g., doors, hatches) shall be designed to operate with no detectable emissions as indicated by an instrument reading of less than 500 ppmv above background, initially and thereafter at least once per year by the methods specified in §61.355(h) of this subpart.

(ii) The closed-vent system and control device shall be designed and operated in accordance with §61.349 of this subpart.

(4) If the cover and closed-vent system operate such that the container is maintained at a pressure less than atmospheric pressure, the owner or operator may operate the system with an opening that is not sealed and kept closed at all times if the following conditions are met:

(i) The purpose of the opening is to provide dilution air to reduce the explosion hazard;

(ii) The opening is designed to operate with no detectable emissions as indicated by an instrument reading of less than 500 ppmv above background, as determined initially and thereafter at least once per year by methods specified in §61.355(h); and

(iii) The pressure is monitored continuously to ensure that the pressure in the container remains below atmospheric pressure.

(b) Each cover and all openings shall be visually inspected initially and quarterly thereafter to ensure that they are closed and gasketed properly.

(c) Except as provided in §61.350 of this subpart, when a broken seal or gasket or other problem is identified, first efforts at repair shall be made as soon as practicable, but not later than 15 calendar days after identification.

[55 FR 8346, Mar. 7, 1990, as amended at 58 FR 3097, Jan. 7, 1993]

**§61.346 Standards: Individual drain systems.**

(a) Except as provided in paragraph (b) of this section, the owner or operator shall meet the following standards for each individual drain system in which waste is placed in accordance with §61.342(c)(1)(ii) of this subpart:

(1) The owner or operator shall install, operate, and maintain on each drain system opening a cover and closed-vent system that routes all or-

ganic vapors vented from the drain system to a control device.

(i) The cover shall meet the following requirements:

(A) The cover and all openings (e.g., access hatches, sampling ports) shall be designed to operate with no detectable emissions as indicated by an instrument reading of less than 500 ppmv above background, initially and thereafter at least once per year by the methods specified in §61.355(h) of this subpart.

(B) Each opening shall be maintained in a closed, sealed position (e.g., covered by a lid that is gasketed and latched) at all times that waste is in the drain system except when it is necessary to use the opening for waste sampling or removal, or for equipment inspection, maintenance, or repair.

(C) If the cover and closed-vent system operate such that the individual drain system is maintained at a pressure less than atmospheric pressure, then paragraph (a)(1)(i)(B) of this section does not apply to any opening that meets all of the following conditions:

(1) The purpose of the opening is to provide dilution air to reduce the explosion hazard;

(2) The opening is designed to operate with no detectable emissions as indicated by an instrument reading of less than 500 ppmv above background, as determined initially and thereafter at least once per year by the methods specified in §61.355(h); and

(3) The pressure is monitored continuously to ensure that the pressure in the individual drain system remains below atmospheric pressure.

(ii) The closed-vent system and control device shall be designed and operated in accordance with §61.349 of this subpart.

(2) Each cover seal, access hatch, and all other openings shall be checked by visual inspection initially and quarterly thereafter to ensure that no cracks or gaps occur and that access hatches and other openings are closed and gasketed properly.

(3) Except as provided in §61.350 of this subpart, when a broken seal or gasket or other problem is identified, or when detectable emissions are measured, first efforts at repair shall be made as soon as practicable, but not

later than 15 calendar days after identification.

(b) As an alternative to complying with paragraph (a) of this section, an owner or operator may elect to comply with the following requirements:

(1) Each drain shall be equipped with water seal controls or a tightly sealed cap or plug.

(2) Each junction box shall be equipped with a cover and may have a vent pipe. The vent pipe shall be at least 90 cm (3 ft) in length and shall not exceed 10.2 cm (4 in) in diameter.

(i) Junction box covers shall have a tight seal around the edge and shall be kept in place at all times, except during inspection and maintenance.

(ii) One of the following methods shall be used to control emissions from the junction box vent pipe to the atmosphere:

(A) Equip the junction box with a system to prevent the flow of organic vapors from the junction box vent pipe to the atmosphere during normal operation. An example of such a system includes use of water seal controls on the junction box. A flow indicator shall be installed, operated, and maintained on each junction box vent pipe to ensure that organic vapors are not vented from the junction box to the atmosphere during normal operation.

(B) Connect the junction box vent pipe to a closed-vent system and control device in accordance with §61.349 of this subpart.

(3) Each sewer line shall not be open to the atmosphere and shall be covered or enclosed in a manner so as to have no visual gaps or cracks in joints, seals, or other emission interfaces.

(4) Equipment installed in accordance with paragraphs (b)(1), (b)(2), or (b)(3) of this section shall be inspected as follows:

(i) Each drain using water seal controls shall be checked by visual or physical inspection initially and thereafter quarterly for indications of low water levels or other conditions that would reduce the effectiveness of water seal controls.

(ii) Each drain using a tightly sealed cap or plug shall be visually inspected initially and thereafter quarterly to ensure caps or plugs are in place and properly installed.

(iii) Each junction box shall be visually inspected initially and thereafter quarterly to ensure that the cover is in place and to ensure that the cover has a tight seal around the edge.

(iv) The unburied portion of each sewer line shall be visually inspected initially and thereafter quarterly for indication of cracks, gaps, or other problems that could result in benzene emissions.

(5) Except as provided in §61.350 of this subpart, when a broken seal, gap, crack or other problem is identified, first efforts at repair shall be made as soon as practicable, but not later than 15 calendar days after identification.

[55 FR 8346, Mar. 7, 1990, as amended at 55 FR 37231, Sept. 10, 1990; 58 FR 3097, Jan. 7, 1993]

**§61.347 Standards: Oil-water separators.**

(a) Except as provided in §61.352 of this subpart, the owner or operator shall meet the following standards for each oil-water separator in which waste is placed in accordance with §61.342(c)(1)(ii) of this subpart:

(1) The owner or operator shall install, operate, and maintain a fixed-roof and closed-vent system that routes all organic vapors vented from the oil-water separator to a control device.

(i) The fixed-roof shall meet the following requirements:

(A) The cover and all openings (e.g., access hatches, sampling ports, and gauge wells) shall be designed to operate with no detectable emissions as indicated by an instrument reading of less than 500 ppmv above background, as determined initially and thereafter at least once per year by the methods specified in §61.355(h) of this subpart.

(B) Each opening shall be maintained in a closed, sealed position (e.g., covered by a lid that is gasketed and latched) at all times that waste is in the oil-water separator except when it is necessary to use the opening for waste sampling or removal, or for equipment inspection, maintenance, or repair.

(C) If the cover and closed-vent system operate such that the oil-water separator is maintained at a pressure less than atmospheric pressure, then paragraph (a)(1)(i)(B) of this section

does not apply to any opening that meets all of the following conditions:

(1) The purpose of the opening is to provide dilution air to reduce the explosion hazard;

(2) The opening is designed to operate with no detectable emissions as indicated by an instrument reading of less than 500 ppmv above background, as determined initially and thereafter at least once per year by the methods specified in § 61.355(h); and

(3) The pressure is monitored continuously to ensure that the pressure in the oil-water separator remains below atmospheric pressure.

(ii) The closed-vent system and control device shall be designed and operated in accordance with the requirements of § 61.349 of this subpart.

(b) Each cover seal, access hatch, and all other openings shall be checked by visual inspection initially and quarterly thereafter to ensure that no cracks or gaps occur between the cover and oil-water separator wall and that access hatches and other openings are closed and gasketed properly.

(c) Except as provided in § 61.350 of this subpart, when a broken seal or gasket or other problem is identified, or when detectable emissions are measured, first efforts at repair shall be made as soon as practicable, but not later than 15 calendar days after identification.

[55 FR 8346, Mar. 7, 1990, as amended at 58 FR 3098, Jan. 7, 1993]

**§ 61.348 Standards: Treatment processes.**

(a) Except as provided in paragraph (a)(5) of this section, the owner or operator shall treat the waste stream in accordance with the following requirements:

(1) The owner or operator shall design, install, operate, and maintain a treatment process that either:

(i) Removes benzene from the waste stream to a level less than 10 parts per million by weight (ppmw) on a flow-weighted annual average basis,

(ii) Removes benzene from the waste stream by 99 percent or more on a mass basis, or

(iii) Destroys benzene in the waste stream by incinerating the waste in a combustion unit that achieves a de-

struction efficiency of 99 percent or greater for benzene.

(2) Each treatment process complying with paragraphs (a)(1)(i) or (a)(1)(ii) of this section shall be designed and operated in accordance with the appropriate waste management unit standards specified in §§ 61.343 through 61.347 of this subpart. For example, if a treatment process is a tank, then the owner or operator shall comply with § 61.343 of this subpart.

(3) For the purpose of complying with the requirements specified in paragraph (a)(1)(i) of this section, the intentional or unintentional reduction in the benzene concentration of a waste stream by dilution of the waste stream with other wastes or materials is not allowed.

(4) An owner or operator may aggregate or mix together individual waste streams to create a combined waste stream for the purpose of facilitating treatment of waste to comply with the requirements of paragraph (a)(1) of this section except as provided in paragraph (a)(5) of this section.

(5) If an owner or operator aggregates or mixes any combination of process wastewater, product tank drawdown, or landfill leachate subject to § 61.342(c)(1) of this subpart together with other waste streams to create a combined waste stream for the purpose of facilitating management or treatment of waste in a wastewater treatment system, then the wastewater treatment system shall be operated in accordance with paragraph (b) of this section. These provisions apply to above-ground wastewater treatment systems as well as those that are at or below ground level.

(b) Except for facilities complying with § 61.342(e), the owner or operator that aggregates or mixes individual waste streams as defined in paragraph (a)(5) of this section for management and treatment in a wastewater treatment system shall comply with the following requirements:

(1) The owner or operator shall design and operate each waste management unit that comprises the wastewater treatment system in accordance with the appropriate standards specified in §§ 61.343 through 61.347 of this subpart.

(2) The provisions of paragraph (b)(1) of this section do not apply to any waste management unit that the owner or operator demonstrates to meet the following conditions initially and, thereafter, at least once per year:

(i) The benzene content of each waste stream entering the waste management unit is less than 10 ppmw on a flow-weighted annual average basis as determined by the procedures specified in §61.355(c) of this subpart; and

(ii) The total annual benzene quantity contained in all waste streams managed or treated in exempt waste management units comprising the facility wastewater treatment systems is less than 1 Mg/yr. For this determination, total annual benzene quantity shall be calculated as follows:

(A) The total annual benzene quantity shall be calculated as the sum of the individual benzene quantities determined at each location where a waste stream first enters an exempt waste management unit. The benzene quantity discharged from an exempt waste management unit shall not be included in this calculation.

(B) The annual benzene quantity in a waste stream managed or treated in an enhanced biodegradation unit shall not be included in the calculation of the total annual benzene quantity, if the enhanced biodegradation unit is the first exempt unit in which the waste is managed or treated. A unit shall be considered enhanced biodegradation if it is a suspended-growth process that generates biomass, uses recycled biomass, and periodically removes biomass from the process. An enhanced biodegradation unit typically operates at a food-to-microorganism ratio in the range of 0.05 to 1.0 kg of biological oxygen demand per kg of biomass per day, a mixed liquor suspended solids ratio in the range of 1 to 8 grams per liter, and a residence time in the range of 3 to 36 hours.

(c) The owner and operator shall demonstrate that each treatment process or wastewater treatment system unit, except as provided in paragraph (d) of this section, achieves the appropriate conditions specified in paragraphs (a) or (b) of this section in accordance with the following requirements:

(1) Engineering calculations in accordance with requirements specified in §61.356(e) of this subpart; or

(2) Performance tests conducted using the test methods and procedures that meet the requirements specified in §61.355 of this subpart.

(d) A treatment process or waste stream is in compliance with the requirements of this subpart and exempt from the requirements of paragraph (c) of this section provided that the owner or operator documents that the treatment process or waste stream is in compliance with other regulatory requirements as follows:

(1) The treatment process is a hazardous waste incinerator for which the owner or operator has been issued a final permit under 40 CFR part 270 and complies with the requirements of 40 CFR part 264, subpart O;

(2) The treatment process is an industrial furnace or boiler burning hazardous waste for energy recovery for which the owner or operator has been issued a final permit under 40 CFR part 270 and complies with the requirements of 40 CFR part 266, subpart D;

(3) The waste stream is treated by a means or to a level that meets benzene-specific treatment standards in accordance with the Land Disposal Restrictions under 40 CFR part 268, and the treatment process is designed and operated with a closed-vent system and control device meeting the requirements of §61.349 of this subpart;

(4) The waste stream is treated by a means or to a level that meets benzene-specific effluent limitations or performance standards in accordance with the Effluent Guidelines and Standards under 40 CFR parts 401-464, and the treatment process is designed and operated with a closed-vent system and control device meeting the requirements of §61.349 of this subpart; or

(5) The waste stream is discharged to an underground injection well for which the owner or operator has been issued a final permit under 40 CFR part 270 and complies with the requirements of 40 CFR part 122.

(e) Except as specified in paragraph (e)(3) of this section, if the treatment process or wastewater treatment system unit has any openings (e.g., access doors, hatches, etc.), all such openings

shall be sealed (e.g., gasketed, latched, etc.) and kept closed at all times when waste is being treated, except during inspection and maintenance.

(1) Each seal, access door, and all other openings shall be checked by visual inspections initially and quarterly thereafter to ensure that no cracks or gaps occur and that openings are closed and gasketed properly.

(2) Except as provided in §61.350 of this subpart, when a broken seal or gasket or other problem is identified, first efforts at repair shall be made as soon as practicable, but not later than 15 calendar days after identification.

(3) If the cover and closed-vent system operate such that the treatment process and wastewater treatment system unit are maintained at a pressure less than atmospheric pressure, the owner or operator may operate the system with an opening that is not sealed and kept closed at all times if the following conditions are met:

(i) The purpose of the opening is to provide dilution air to reduce the explosion hazard;

(ii) The opening is designed to operate with no detectable emissions as indicated by an instrument reading of less than 500 ppmv above background, as determined initially and thereafter at least once per year by the methods specified in §61.355(h); and

(iii) The pressure is monitored continuously to ensure that the pressure in the treatment process and wastewater treatment system unit remain below atmospheric pressure.

(f) Except for treatment processes complying with paragraph (d) of this section, the Administrator may request at any time an owner or operator demonstrate that a treatment process or wastewater treatment system unit meets the applicable requirements specified in paragraphs (a) or (b) of this section by conducting a performance test using the test methods and procedures as required in §61.355 of this subpart.

(g) The owner or operator of a treatment process or wastewater treatment system unit that is used to comply with the provisions of this section shall monitor the unit in accordance with

the applicable requirements in §61.354 of this subpart.

[55 FR 8346, Mar. 7, 1990, as amended at 55 FR 37231, Sept. 10, 1990; 58 FR 3098, Jan. 7, 1993]

**§61.349 Standards: Closed-vent systems and control devices.**

(a) For each closed-vent system and control device used to comply with standards in accordance with §§61.343 through 61.348 of this subpart, the owner or operator shall properly design, install, operate, and maintain the closed-vent system and control device in accordance with the following requirements:

(1) The closed-vent system shall:

(i) Be designed to operate with no detectable emissions as indicated by an instrument reading of less than 500 ppmv above background, as determined initially and thereafter at least once per year by the methods specified in §61.355(h) of this subpart.

(ii) Vent systems that contain any bypass line that could divert the vent stream away from a control device used to comply with the provisions of this subpart shall install, maintain, and operate according to the manufacturer's specifications a flow indicator that provides a record of vent stream flow away from the control device at least once every 15 minutes, except as provided in paragraph (a)(1)(ii)(B) of this section.

(A) The flow indicator shall be installed at the entrance to any bypass line that could divert the vent stream away from the control device to the atmosphere.

(B) Where the bypass line valve is secured in the closed position with a car-seal or a lock-and-key type configuration, a flow indicator is not required.

(iii) All gauging and sampling devices shall be gas-tight except when gauging or sampling is taking place.

(iv) For each closed-vent system complying with paragraph (a) of this section, one or more devices which vent directly to the atmosphere may be used on the closed-vent system provided each device remains in a closed, sealed position during normal operations except when the device needs to open to prevent physical damage or permanent deformation of the closed-

vent system resulting from malfunction of the unit in accordance with good engineering and safety practices for handling flammable, explosive, or other hazardous materials.

(2) The control device shall be designed and operated in accordance with the following conditions:

(i) An enclosed combustion device (e.g., a vapor incinerator, boiler, or process heater) shall meet one of the following conditions:

(A) Reduce the organic emissions vented to it by 95 weight percent or greater;

(B) Achieve a total organic compound concentration of 20 ppmv (as the sum of the concentrations for individual compounds using Method 18) on a dry basis corrected to 3 percent oxygen; or

(C) Provide a minimum residence time of 0.5 seconds at a minimum temperature of 760°C. If a boiler or process heater issued as the control device, then the vent stream shall be introduced into the flame zone of the boiler or process heater.

(ii) A vapor recovery system (e.g., a carbon adsorption system or a condenser) shall recover or control the organic emissions vented to it with an efficiency of 95 weight percent or greater, or shall recover or control the benzene emissions vented to it with an efficiency of 98 weight percent or greater.

(iii) A flare shall comply with the requirements of 40 CFR 60.18.

(iv) A control device other than those described in paragraphs (a)(2) (i) through (iii) of this section may be used provided that the following conditions are met:

(A) The device shall recover or control the organic emissions vented to it with an efficiency of 95 weight percent or greater, or shall recover or control the benzene emissions vented to it with an efficiency of 98 weight percent or greater.

(B) The owner or operator shall develop test data and design information that documents the control device will achieve an emission control efficiency of either 95 percent or greater for organic compounds or 98 percent or greater for benzene.

(C) The owner or operator shall identify:

(1) The critical operating parameters that affect the emission control performance of the device;

(2) The range of values of these operating parameters that ensure the emission control efficiency specified in paragraph (a)(2)(iv)(A) of this section is maintained during operation of the device; and

(3) How these operating parameters will be monitored to ensure the proper operation and maintenance of the device.

(D) The owner or operator shall submit the information and data specified in paragraphs (a)(2)(iv) (B) and (C) of this section to the Administrator prior to operation of the alternative control device.

(E) The Administrator will determine, based on the information submitted under paragraph (a)(2)(iv)(D) of this section, if the control device subject to paragraph (a)(2)(iv) of this section meets the requirements of §61.349. The control device subject to paragraph (a)(2)(iv) of this section may be operated prior to receiving approval from the Administrator. However, if the Administrator determines that the control device does not meet the requirements of §61.349, the facility may be subject to enforcement action beginning from the time the control device began operation.

(b) Each closed-vent system and control device used to comply with this subpart shall be operated at all times when waste is placed in the waste management unit vented to the control device except when maintenance or repair of the waste management unit cannot be completed without a shutdown of the control device.

(c) An owner and operator shall demonstrate that each control device, except for a flare, achieves the appropriate conditions specified in paragraph (a)(2) of this section by using one of the following methods:

(1) Engineering calculations in accordance with requirements specified in §61.356(f) of this subpart; or

(2) Performance tests conducted using the test methods and procedures that meet the requirements specified in §61.355 of this subpart.

(d) An owner or operator shall demonstrate compliance of each flare in accordance with paragraph (a)(2)(iii) of this section.

(e) The Administrator may request at any time an owner or operator demonstrate that a control device meets the applicable conditions specified in paragraph (a)(2) of this section by conducting a performance test using the test methods and procedures as required in §61.355, and for control devices subject to paragraph (a)(2)(iv) of this section, the Administrator may specify alternative test methods and procedures, as appropriate.

(f) Each closed-vent system and control device shall be visually inspected initially and quarterly thereafter. The visual inspection shall include inspection of ductwork and piping and connections to covers and control devices for evidence of visible defects such as holes in ductwork or piping and loose connections.

(g) Except as provided in §61.350 of this subpart, if visible defects are observed during an inspection, or if other problems are identified, or if detectable emissions are measured, a first effort to repair the closed-vent system and control device shall be made as soon as practicable but no later than 5 calendar days after detection. Repair shall be completed no later than 15 calendar days after the emissions are detected or the visible defect is observed.

(h) The owner or operator of a control device that is used to comply with the provisions of this section shall monitor the control device in accordance with §61.354(c) of this subpart.

[55 FR 8346, Mar. 7, 1990; 55 FR 12444, Apr. 3, 1990, as amended at 55 FR 37231, Sept. 10, 1990; 58 FR 3098, Jan. 7, 1993]

**§61.350 Standards: Delay of repair.**

(a) Delay of repair of facilities or units that are subject to the provisions of this subpart will be allowed if the repair is technically impossible without a complete or partial facility or unit shutdown.

(b) Repair of such equipment shall occur before the end of the next facility or unit shutdown.

**§61.351 Alternative standards for tanks.**

(a) As an alternative to the standards for tanks specified in §61.343 of this subpart, an owner or operator may elect to comply with one of the following:

(1) A fixed roof and internal floating roof meeting the requirements in 40 CFR 60.112b(a)(1);

(2) An external floating roof meeting the requirements of 40 CFR 60.112b(a)(2); or

(3) An alternative means of emission limitation as described in 40 CFR 60.114b.

(b) If an owner or operator elects to comply with the provisions of this section, then the owner or operator is exempt from the provisions of §61.343 of this subpart applicable to the same facilities.

[55 FR 8346, Mar. 7, 1990, as amended at 55 FR 37231, Sept. 10, 1990]

**§61.352 Alternative standards for oil-water separators.**

(a) As an alternative to the standards for oil-water separators specified in §61.347 of this subpart, an owner or operator may elect to comply with one of the following:

(1) A floating roof meeting the requirements in 40 CFR 60.693–2(a); or

(2) An alternative means of emission limitation as described in 40 CFR 60.694.

(b) For portions of the oil-water separator where it is infeasible to construct and operate a floating roof, such as over the weir mechanism, a fixed roof vented to a vapor control device that meets the requirements in §§61.347 and 61.349 of this subpart shall be installed and operated.

(c) Except as provided in paragraph (b) of this section, if an owner or operator elects to comply with the provisions of this section, then the owner or operator is exempt from the provisions in §61.347 of this subpart applicable to the same facilities.

**§61.353 Alternative means of emission limitation.**

(a) If, in the Administrator's judgment, an alternative means of emission limitation will achieve a reduction in benzene emissions at least equivalent

to the reduction in benzene emissions from the source achieved by the applicable design, equipment, work practice, or operational requirements in §§ 61.342 through 61.349, the Administrator will publish in the FEDERAL REGISTER a notice permitting the use of the alternative means for purposes of compliance with that requirement. The notice may condition the permission on requirements related to the operation and maintenance of the alternative means.

(b) Any notice under paragraph (a) of this section shall be published only after public notice and an opportunity for a hearing.

(c) Any person seeking permission under this section shall collect, verify, and submit to the Administrator information showing that the alternative means achieves equivalent emission reductions.

[55 FR 8346, Mar. 7, 1990, as amended at 58 FR 3099, Jan. 7, 1993]

#### § 61.354 Monitoring of operations.

(a) Except for a treatment process or waste stream complying with § 61.348(d), the owner or operator shall monitor each treatment process or wastewater treatment system unit to ensure the unit is properly operated and maintained by one of the following monitoring procedures:

(1) Measure the benzene concentration of the waste stream exiting the treatment process complying with § 61.348(a)(1)(i) at least once per month by collecting and analyzing one or more samples using the procedures specified in § 61.355(c)(3).

(2) Install, calibrate, operate, and maintain according to manufacturer's specifications equipment to continuously monitor and record a process parameter (or parameters) for the treatment process or wastewater treatment system unit that indicates proper system operation. The owner or operator shall inspect at least once each operating day the data recorded by the monitoring equipment (e.g., temperature monitor or flow indicator) to ensure that the unit is operating properly.

(b) If an owner or operator complies with the requirements of § 61.348(b), then the owner or operator shall monitor each wastewater treatment system

to ensure the unit is properly operated and maintained by the appropriate monitoring procedure as follows:

(1) For the first exempt waste management unit in each waste treatment train, other than an enhanced biodegradation unit, measure the flow rate, using the procedures of § 61.355(b), and the benzene concentration of each waste stream entering the unit at least once per month by collecting and analyzing one or more samples using the procedures specified in § 61.355(c)(3).

(2) For each enhanced biodegradation unit that is the first exempt waste management unit in a treatment train, measure the benzene concentration of each waste stream entering the unit at least once per month by collecting and analyzing one or more samples using the procedures specified in § 61.355(c)(3).

(c) An owner or operator subject to the requirements in § 61.349 of this subpart shall install, calibrate, maintain, and operate according to the manufacturer's specifications a device to continuously monitor the control device operation as specified in the following paragraphs, unless alternative monitoring procedures or requirements are approved for that facility by the Administrator. The owner or operator shall inspect at least once each operating day the data recorded by the monitoring equipment (e.g., temperature monitor or flow indicator) to ensure that the control device is operating properly.

(1) For a thermal vapor incinerator, a temperature monitoring device equipped with a continuous recorder. The device shall have an accuracy of  $\pm 1$  percent of the temperature being monitored in  $^{\circ}\text{C}$  or  $\pm 0.5^{\circ}\text{C}$ , whichever is greater. The temperature sensor shall be installed at a representative location in the combustion chamber.

(2) For a catalytic vapor incinerator, a temperature monitoring device equipped with a continuous recorder. The device shall be capable of monitoring temperature at two locations, and have an accuracy of  $\pm 1$  percent of the temperature being monitored in  $^{\circ}\text{C}$  or  $\pm 0.5^{\circ}\text{C}$ , whichever is greater. One temperature sensor shall be installed in the vent stream at the nearest feasible point to the catalyst bed inlet and a

second temperature sensor shall be installed in the vent stream at the nearest feasible point to the catalyst bed outlet.

(3) For a flare, a monitoring device in accordance with 40 CFR 60.18(f)(2) equipped with a continuous recorder.

(4) For a boiler or process heater having a design heat input capacity less than 44 megawatts (MW), a temperature monitoring device equipped with a continuous recorder. The device shall have an accuracy of  $\pm 1$  percent of the temperature being monitored in  $^{\circ}\text{C}$  or  $\pm 0.5^{\circ}\text{C}$ , whichever is greater. The temperature sensor shall be installed at a representative location in the combustion chamber.

(5) For a boiler or process heater having a design heat input capacity greater than or equal to 44 MW, a monitoring device equipped with a continuous recorder to measure a parameter(s) that indicates good combustion operating practices are being used.

(6) For a condenser, either:

(i) A monitoring device equipped with a continuous recorder to measure either the concentration level of the organic compounds or the concentration level of benzene in the exhaust vent stream from the condenser; or

(ii) A temperature monitoring device equipped with a continuous recorder. The device shall be capable of monitoring temperature at two locations, and have an accuracy of  $\pm 1$  percent of the temperature being monitored in  $^{\circ}\text{C}$  or  $\pm 0.5^{\circ}\text{C}$ , whichever is greater. One temperature sensor shall be installed at a location in the exhaust stream from the condenser, and a second temperature sensor shall be installed at a location in the coolant fluid exiting the condenser.

(7) For a carbon adsorption system that regenerates the carbon bed directly in the control device such as a fixed-bed carbon adsorber, either:

(i) A monitoring device equipped with a continuous recorder to measure either the concentration level of the organic compounds or the benzene concentration level in the exhaust vent stream from the carbon bed; or

(ii) A monitoring device equipped with a continuous recorder to measure a parameter that indicates the carbon

bed is regenerated on a regular, predetermined time cycle.

(8) For a vapor recovery system other than a condenser or carbon adsorption system, a monitoring device equipped with a continuous recorder to measure either the concentration level of the organic compounds or the benzene concentration level in the exhaust vent stream from the control device.

(9) For a control device subject to the requirements of § 61.349(a)(2)(iv), devices to monitor the parameters as specified in § 61.349(a)(2)(iv)(C).

(d) For a carbon adsorption system that does not regenerate the carbon bed directly on site in the control device (e.g., a carbon canister), either the concentration level of the organic compounds or the concentration level of benzene in the exhaust vent stream from the carbon adsorption system shall be monitored on a regular schedule, and the existing carbon shall be replaced with fresh carbon immediately when carbon breakthrough is indicated. The device shall be monitored on a daily basis or at intervals no greater than 20 percent of the design carbon replacement interval, whichever is greater. As an alternative to conducting this monitoring, an owner or operator may replace the carbon in the carbon adsorption system with fresh carbon at a regular predetermined time interval that is less than the carbon replacement interval that is determined by the maximum design flow rate and either the organic concentration or the benzene concentration in the gas stream vented to the carbon adsorption system.

(e) An alternative operation or process parameter may be monitored if it can be demonstrated that another parameter will ensure that the control device is operated in conformance with these standards and the control device's design specifications.

(f) Owners or operators using a closed-vent system that contains any bypass line that could divert a vent stream from a control device used to comply with the provisions of this subpart shall do the following:

(1) Visually inspect the bypass line valve at least once every month, checking the position of the valve and the condition of the car-seal or closure

mechanism required under §61.349(a)(1)(ii) to ensure that the valve is maintained in the closed position and the vent stream is not diverted through the bypass line.

(2) Visually inspect the readings from each flow monitoring device required by §61.349(a)(1)(ii) at least once each operating day to check that vapors are being routed to the control device as required.

(g) Each owner or operator who uses a system for emission control that is maintained at a pressure less than atmospheric pressure with openings to provide dilution air shall install, calibrate, maintain, and operate according to the manufacturer's specifications a device equipped with a continuous recorder to monitor the pressure in the unit to ensure that it is less than atmospheric pressure.

[55 FR 8346, Mar. 7, 1990, as amended at 58 FR 3099, Jan. 7, 1993]

**§61.355 Test methods, procedures, and compliance provisions.**

(a) An owner or operator shall determine the total annual benzene quantity from facility waste by the following procedure:

(1) For each waste stream subject to this subpart having a flow-weighted annual average water content greater than 10 percent water, on a volume basis as total water, or is mixed with water or other wastes at any time and the resulting mixture has an annual average water content greater than 10 percent as specified in §61.342(a), the owner or operator shall:

(i) Determine the annual waste quantity for each waste stream using the procedures specified in paragraph (b) of this section.

(ii) Determine the flow-weighted annual average benzene concentration for each waste stream using the procedures specified in paragraph (c) of this section.

(iii) Calculate the annual benzene quantity for each waste stream by multiplying the annual waste quantity of the waste stream times the flow-weighted annual average benzene concentration.

(2) Total annual benzene quantity from facility waste is calculated by adding together the annual benzene

quantity for each waste stream generated during the year and the annual benzene quantity for each process unit turnaround waste annualized according to paragraph (b)(4) of this section.

(3) If the total annual benzene quantity from facility waste is equal to or greater than 10 mg/yr, then the owner or operator shall comply with the requirements of §61.342 (c), (d), or (e).

(4) If the total annual benzene quantity from facility waste is less than 10 Mg/yr but is equal to or greater than 1 Mg/yr, then the owner or operator shall:

(i) Comply with the recordkeeping requirements of §61.356 and reporting requirements of §61.357 of this subpart; and

(ii) Repeat the determination of total annual benzene quantity from facility waste at least once per year and whenever there is a change in the process generating the waste that could cause the total annual benzene quantity from facility waste to increase to 10 Mg/yr or more.

(5) If the total annual benzene quantity from facility waste is less than 1 Mg/yr, then the owner or operator shall:

(i) Comply with the recordkeeping requirements of §61.356 and reporting requirements of §61.357 of this subpart; and

(ii) Repeat the determination of total annual benzene quantity from facility waste whenever there is a change in the process generating the waste that could cause the total annual benzene quantity from facility waste to increase to 1 Mg/yr or more.

(6) The benzene quantity in a waste stream that is generated less than one time per year, except as provided for process unit turnaround waste in paragraph (b)(4) of this section, shall be included in the determination of total annual benzene quantity from facility waste for the year in which the waste is generated unless the waste stream is otherwise excluded from the determination of total annual benzene quantity from facility waste in accordance with paragraphs (a) through (c) of this section. The benzene quantity in this waste stream shall not be annualized or averaged over the time interval between the activities that resulted in

generation of the waste, for purposes of determining the total annual benzene quantity from facility waste.

(b) For purposes of the calculation required by paragraph (a) of this section, an owner or operator shall determine the annual waste quantity at the point of waste generation, unless otherwise provided in paragraphs (b) (1), (2), (3), and (4) of this section, by one of the methods given in paragraphs (b) (5) through (7) of this section.

(1) The determination of annual waste quantity for sour water streams that are processed in sour water strippers shall be made at the point that the water exits the sour water stripper.

(2) The determination of annual waste quantity for wastes at coke by-product plants subject to and complying with the control requirements of §61.132, 61.133, 61.134, or 61.139 of subpart L of this part shall be made at the location that the waste stream exits the process unit component or waste management unit controlled by that subpart or at the exit of the ammonia still, provided that the following conditions are met:

(i) The transfer of wastes between units complying with the control requirements of subpart L of this part, process units, and the ammonia still is made through hard piping or other enclosed system.

(ii) The ammonia still meets the definition of a sour water stripper in §61.341.

(3) The determination of annual waste quantity for wastes that are received at hazardous waste treatment, storage, or disposal facilities from off-site shall be made at the point where the waste enters the hazardous waste treatment, storage, or disposal facility.

(4) The determination of annual waste quantity for each process unit turnaround waste generated only at 2 year or greater intervals, may be made by dividing the total quantity of waste generated during the most recent process unit turnaround by the time period (in the nearest tenth of a year) between the turnaround resulting in generation of the waste and the most recent preceding process turnaround for the unit. The resulting annual waste quantity shall be included in the calculation of the annual benzene quantity as pro-

vided in paragraph (a)(1)(iii) of this section for the year in which the turnaround occurs and for each subsequent year until the unit undergoes the next process turnaround. For estimates of total annual benzene quantity as specified in the 90-day report, required under §61.357(a)(1), the owner or operator shall estimate the waste quantity generated during the most recent turnaround, and the time period between turnarounds in accordance with good engineering practices. If the owner or operator chooses not to annualize process unit turnaround waste, as specified in this paragraph, then the process unit turnaround waste quantity shall be included in the calculation of the annual benzene quantity for the year in which the turnaround occurs.

(5) Select the highest annual quantity of waste managed from historical records representing the most recent 5 years of operation or, if the facility has been in service for less than 5 years but at least 1 year, from historical records representing the total operating life of the facility;

(6) Use the maximum design capacity of the waste management unit; or

(7) Use measurements that are representative of maximum waste generation rates.

(c) For the purposes of the calculation required by §§61.355(a) of this subpart, an owner or operator shall determine the flow-weighted annual average benzene concentration in a manner that meets the requirements given in paragraph (c)(1) of this section using either of the methods given in paragraphs (c)(2) and (c)(3) of this section.

(1) The determination of flow-weighted annual average benzene concentration shall meet all of the following criteria:

(i) The determination shall be made at the point of waste generation except for the specific cases given in paragraphs (c)(1)(i)(A) through (D) of this section.

(A) The determination for sour water streams that are processed in sour water strippers shall be made at the point that the water exits the sour water stripper.

(B) The determination for wastes at coke by-product plants subject to and

complying with the control requirements of § 61.132, 61.133, 61.134, or 61.139 of subpart L of this part shall be made at the location that the waste stream exits the process unit component or waste management unit controlled by that subpart or at the exit of the ammonia still, provided that the following conditions are met:

(1) The transfer of wastes between units complying with the control requirements of subpart L of this part, process units, and the ammonia still is made through hard piping or other enclosed system.

(2) The ammonia still meets the definition of a sour water stripper in § 61.341.

(C) The determination for wastes that are received from offsite shall be made at the point where the waste enters the hazardous waste treatment, storage, or disposal facility.

(D) The determination of flow-weighted annual average benzene concentration for process unit turnaround waste shall be made using either of the methods given in paragraph (c)(2) or (c)(3) of this section. The resulting flow-weighted annual average benzene concentration shall be included in the calculation of annual benzene quantity as provided in paragraph (a)(1)(iii) of this section for the year in which the turnaround occurs and for each subsequent year until the unit undergoes the next process unit turnaround.

(i) Volatilization of the benzene by exposure to air shall not be used in the determination to reduce the benzene concentration.

(iii) Mixing or diluting the waste stream with other wastes or other materials shall not be used in the determination—to reduce the benzene concentration.

(iv) The determination shall be made prior to any treatment of the waste that removes benzene, except as specified in paragraphs (c)(1)(i)(A) through (D) of this section.

(v) For wastes with multiple phases, the determination shall provide the weighted-average benzene concentration based on the benzene concentration in each phase of the waste and the relative proportion of the phases.

(2) *Knowledge of the waste.* The owner or operator shall provide sufficient in-

formation to document the flow-weighted annual average benzene concentration of each waste stream. Examples of information that could constitute knowledge include material balances, records of chemicals purchases, or previous test results provided the results are still relevant to the current waste stream conditions. If test data are used, then the owner or operator shall provide documentation describing the testing protocol and the means by which sampling variability and analytical variability were accounted for in the determination of the flow-weighted annual average benzene concentration for the waste stream. When an owner or operator and the Administrator do not agree on determinations of the flow-weighted annual average benzene concentration based on knowledge of the waste, the procedures under paragraph (c)(3) of this section shall be used to resolve the disagreement.

(3) Measurements of the benzene concentration in the waste stream in accordance with the following procedures:

(i) Collect a minimum of three representative samples from each waste stream. Where feasible, samples shall be taken from an enclosed pipe prior to the waste being exposed to the atmosphere.

(ii) For waste in enclosed pipes, the following procedures shall be used:

(A) Samples shall be collected prior to the waste being exposed to the atmosphere in order to minimize the loss of benzene prior to sampling.

(B) A static mixer shall be installed in the process line or in a by-pass line unless the owner or operator demonstrates that installation of a static mixer in the line is not necessary to accurately determine the benzene concentration of the waste stream.

(C) The sampling tap shall be located within two pipe diameters of the static mixer outlet.

(D) Prior to the initiation of sampling, sample lines and cooling coil shall be purged with at least four volumes of waste.

(E) After purging, the sample flow shall be directed to a sample container and the tip of the sampling tube shall be kept below the surface of the waste

during sampling to minimize contact with the atmosphere.

(F) Samples shall be collected at a flow rate such that the cooling coil is able to maintain a waste temperature less than 10°C.

(G) After filling, the sample container shall be capped immediately (within 5 seconds) to leave a minimum headspace in the container.

(H) The sample containers shall immediately be cooled and maintained at a temperature below 10°C for transfer to the laboratory.

(iii) When sampling from an enclosed pipe is not feasible, a minimum of three representative samples shall be collected in a manner to minimize exposure of the sample to the atmosphere and loss of benzene prior to sampling.

(iv) Each waste sample shall be analyzed using one of the following test methods for determining the benzene concentration in a waste stream:

(A) Method 8020, Aromatic Volatile Organics, in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication No. SW-846 (incorporation by reference as specified in §61.18 of this part);

(B) Method 8021, Volatile Organic Compounds in Water by Purge and Trap Capillary Column Gas Chromatography with Photoionization and Electrolytic Conductivity Detectors in Series in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication No. SW-846 (incorporation by reference as specified in §61.18 of this part);

(C) Method 8240, Gas Chromatography/Mass Spectrometry for Volatile Organics in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication No. SW-846 (incorporation by reference as specified in §61.18 of this part);

(D) Method 8260, Gas Chromatography/Mass Spectrometry for Volatile Organics: Capillary Column Technique in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication No. SW-846 (incorporation by reference as specified in §61.18 of this part);

(E) Method 602, Purgeable Aromatics, as described in 40 CFR part 136, appendix A, Test Procedures for Analysis of Organic Pollutants, for wastewaters for

which this is an approved EPA method; or

(F) Method 624, Purgeables, as described in 40 CFR part 136, appendix A, Test Procedures for Analysis of Organic Pollutants, for wastewaters for which this is an approved EPA method.

(v) The flow-weighted annual average benzene concentration shall be calculated by averaging the results of the sample analyses as follows:

$$\bar{C} = \frac{1}{Q_t} \times \sum_{i=1}^n (Q_i)(C_i)$$

Where:

$\bar{C}$ =Flow-weighted annual average benzene concentration for waste stream, ppmw.

$Q_t$ =Total annual waste quantity for waste stream, kg/yr.

$n$ =Number of waste samples (at least 3).

$Q_i$ =Annual waste quantity for waste stream represented by  $C_i$ , kg/yr.

$C_i$ =Measured concentration of benzene in waste sample  $i$ , ppmw.

(d) An owner or operator using performance tests to demonstrate compliance of a treatment process with §61.348 (a)(1)(i) shall measure the flow-weighted annual average benzene concentration of the waste stream exiting the treatment process by collecting and analyzing a minimum of three representative samples of the waste stream using the procedures in paragraph (c)(3) of this section. The test shall be conducted under conditions that exist when the treatment process is operating at the highest inlet waste stream flow rate and benzene content expected to occur. Operations during periods of startup, shutdown, and malfunction shall not constitute representative conditions for the purpose of a test. The owner or operator shall record all process information as is necessary to document the operating conditions during the test.

(e) An owner or operator using performance tests to demonstrate compliance of a treatment process with §61.348(a)(1)(ii) of this subpart shall determine the percent reduction of benzene in the waste stream on a mass basis by the following procedure:

(1) The test shall be conducted under conditions that exist when the treatment process is operating at the highest inlet waste stream flow rate and benzene content expected to occur. Operations during periods of startup, shutdown, and malfunction shall not constitute representative conditions for the purpose of a test. The owner or operator shall record all process information as is necessary to document the operating conditions during the test.

(2) All testing equipment shall be prepared and installed as specified in the appropriate test methods.

(3) The mass flow rate of benzene entering the treatment process ( $E_b$ ) shall be determined by computing the product of the flow rate of the waste stream entering the treatment process, as determined by the inlet flow meter, and the benzene concentration of the waste stream, as determined using the sampling and analytical procedures specified in paragraph (c)(2) or (c)(3) of this section. Three grab samples of the waste shall be taken at equally spaced time intervals over a 1-hour period. Each 1-hour period constitutes a run, and the performance test shall consist of a minimum of 3 runs conducted over a 3-hour period. The mass flow rate of benzene entering the treatment process is calculated as follows:

$$E_b = \frac{K}{n \times 10^6} \left[ \sum_{i=1}^n V_i C_i \right]$$

Where:

$E_b$ =Mass flow rate of benzene entering the treatment process, kg/hour.

$K$ =Density of the waste stream, kg/m<sup>3</sup>.

$V_i$ =Average volume flow rate of waste entering the treatment process during each run  $i$ , m<sup>3</sup>/hour.

$C_i$ =Average concentration of benzene in the waste stream entering the treatment process during each run  $i$ , ppmw.

$n$ =Number of runs.

(4) The mass flow rate of benzene exiting the treatment process ( $E_a$ ) shall be determined by computing the product of the flow rate of the waste stream exiting the treatment process, as determined by the outlet flow meter or the

inlet flow meter, and the benzene concentration of the waste stream, as determined using the sampling and analytical procedures specified in paragraph (c)(2) or (c)(3) of this section. Three grab samples of the waste shall be taken at equally spaced time intervals over a 1-hour period. Each 1-hour period constitutes a run, and the performance test shall consist of a minimum of 3 runs conducted over the same 3-hour period at which the mass flow rate of benzene entering the treatment process is determined. The mass flow rate of benzene exiting the treatment process is calculated as follows:

$$E_a = \frac{K}{n \times 10^6} \left[ \sum_{i=1}^n V_i C_i \right]$$

Where:

$E_a$ =Mass flow rate of benzene exiting the treatment process, kg/hour.

$K$ =Density of the waste stream, kg/m<sup>3</sup>.

$V_i$ =Average volume flow rate of waste exiting the treatment process during each run  $i$ , m<sup>3</sup>/hour.

$C_i$ =Average concentration of benzene in the waste stream exiting the treatment process during each run  $i$ , ppmw.

$n$ =Number of runs.

(f) An owner or operator using performance tests to demonstrate compliance of a treatment process with §61.348(a)(1)(iii) of this subpart shall determine the benzene destruction efficiency for the combustion unit by the following procedure:

(1) The test shall be conducted under conditions that exist when the combustion unit is operating at the highest inlet waste stream flow rate and benzene content expected to occur. Operations during periods of startup, shutdown, and malfunction shall not constitute representative conditions for the purpose of a test. The owner or operator shall record all process information necessary to document the operating conditions during the test.

(2) All testing equipment shall be prepared and installed as specified in the appropriate test methods.

(3) The mass flow rate of benzene entering the combustion unit shall be determined by computing the product of the flow rate of the waste stream entering the combustion unit, as determined by the inlet flow meter, and the benzene concentration of the waste stream, as determined using the sampling procedures in paragraph (c)(2) or (c)(3) of this section. Three grab samples of the waste shall be taken at equally spaced time intervals over a 1-hour period. Each 1-hour period constitutes a run, and the performance test shall consist of a minimum of 3 runs conducted over a 3-hour period. The mass flow rate of benzene into the combustion unit is calculated as follows:

$$E_b = \frac{K}{n \times 10^6} \left[ \sum_{i=1}^n V_i C_i \right]$$

Where:

$E_b$ =Mass flow rate of benzene into the combustion unit, kg/hour.

$K$ =Density of the waste stream, kg/m<sup>3</sup>.

$V_i$ =Average volume flow rate of waste entering the combustion unit during each run  $i$ , m<sup>3</sup>/hour.

$C_i$ =Average concentration of benzene in the waste stream entering the combustion unit during each run  $i$ , ppmw.

$n$ =Number of runs.

(4) The mass flow rate of benzene exiting the combustion unit exhaust stack shall be determined as follows:

(i) The time period for the test shall not be less than 3 hours during which at least 3 stack gas samples are collected and be the same time period at which the mass flow rate of benzene entering the treatment process is determined. Each sample shall be collected over a 1-hour period (e.g., in a tedlar bag) to represent a time-integrated composite sample and each 1-hour period shall correspond to the periods when the waste feed is sampled.

(ii) A run shall consist of a 1-hour period during the test. For each run:

(A) The reading from each measurement shall be recorded;

(B) The volume exhausted shall be determined using method 2, 2A, 2C, or 2D from appendix A of 40 CFR part 60, as appropriate.

(C) The average benzene concentration in the exhaust downstream of the combustion unit shall be determined using method 18 from appendix A of 40 CFR part 60.

(iii) The mass of benzene emitted during each run shall be calculated as follows:

$$M_i = KVC(10^{-6})$$

Where:

$M_i$ =Mass of benzene emitted during run  $i$ , kg.

$V$ =Volume of air-vapor mixture exhausted at standard conditions, m<sup>3</sup>.

$C$ =Concentration of benzene measured in the exhaust, ppmv.

$K$ =Conversion factor=3.24 kg/m<sup>3</sup> for benzene.

(iv) The benzene mass emission rate in the exhaust shall be calculated as follows:

$$E_a = \left( \sum_{i=1}^n M_i \right) / T$$

Where:

$E_a$ =Mass flow rate of benzene emitted, kg/hour.

$M_i$ =Mass of benzene emitted during run  $i$ , kg.

$T$ =Total time of all runs, hour.

$n$ =Number of runs.

(5) The benzene destruction efficiency for the combustion unit shall be calculated as follows:

$$R = \frac{E_b - E_a}{E_b} \times 100$$

Where:

$R$ =Benzene destruction efficiency for the combustion unit, percent.

$E_b$ =Mass flow rate of benzene into the combustion unit, kg/hour.

$E_a$ =Mass flow of benzene from the combustion unit, kg/hour.

(g) An owner or operator using performance tests to demonstrate compliance of a wastewater treatment system unit with §61.348(b) shall measure the flow-weighted annual average benzene concentration of the wastewater

stream where the waste stream enters an exempt waste management unit by collecting and analyzing a minimum of three representative samples of the waste stream using the procedures in paragraph (c)(3) of this section. The test shall be conducted under conditions that exist when the wastewater treatment system is operating at the highest inlet wastewater stream flow rate and benzene content expected to occur. Operations during periods of startup, shutdown, and malfunction shall not constitute representative conditions for the purpose of a test. The owner or operator shall record all process information as is necessary to document the operating conditions during the test.

(h) An owner or operator shall test equipment for compliance with no detectable emissions as required in §§ 61.343 through 61.347, and § 61.349 of this subpart in accordance with the following requirements:

(1) Monitoring shall comply with method 21 from appendix A of 40 CFR part 60.

(2) The detection instrument shall meet the performance criteria of method 21.

(3) The instrument shall be calibrated before use on each day of its use by the procedures specified in method 21.

(4) Calibration gases shall be:

(i) Zero air (less than 10 ppm of hydrocarbon in air); and

(ii) A mixture of methane or n-hexane and air at a concentration of approximately, but less than, 10,000 ppm methane or n-hexane.

(5) The background level shall be determined as set forth in method 21.

(6) The instrument probe shall be traversed around all potential leak interfaces as close as possible to the interface as described in method 21.

(7) The arithmetic difference between the maximum concentration indicated by the instrument and the background level is compared to 500 ppm for determining compliance.

(i) An owner or operator using a performance test to demonstrate compli-

ance of a control device with either the organic reduction efficiency requirement or the benzene reduction efficiency requirement specified under § 61.349(a)(2) shall use the following procedures:

(1) The test shall be conducted under conditions that exist when the waste management unit vented to the control device is operating at the highest load or capacity level expected to occur. Operations during periods of startup, shutdown, and malfunction shall not constitute representative conditions for the purpose of a test. The owner or operator shall record all process information necessary to document the operating conditions during the test.

(2) Sampling sites shall be selected using method 1 or 1A from appendix A of 40 CFR part 60, as appropriate.

(3) The mass flow rate of either the organics or benzene entering and exiting the control device shall be determined as follows:

(i) The time period for the test shall not be less than 3 hours during which at least 3 stack gas samples are collected. Samples of the vent stream entering and exiting the control device shall be collected during the same time period. Each sample shall be collected over a 1-hour period (e.g., in a tedlar bag) to represent a time-integrated composite sample.

(ii) A run shall consist of a 1-hour period during the test. For each run:

(A) The reading from each measurement shall be recorded;

(B) The volume exhausted shall be determined using method 2, 2A, 2C, or 2D from appendix A of 40 CFR part 60, as appropriate;

(C) The organic concentration or the benzene concentration, as appropriate, in the vent stream entering and exiting the control shall be determined using Method 18 from Appendix A of 40 CFR part 60.

(iii) The mass of organics or benzene entering and exiting the control device during each run shall be calculated as follows:

$$M_{aj} = K V_{aj} \left[ \sum_{i=1}^n C_{ai} MW_i \right] (10^{-6})$$

$$M_{bj} = K V_{bj} \left[ \sum_{i=1}^n C_{bi} MW_i \right] (10^{-6})$$

Where:

$M_{aj}$ =Mass of organics or benzene in the vent stream entering the control device during run j, kg.

$M_{bj}$ =Mass of organics or benzene in the vent stream exiting the control device during run j, kg.

$V_{aj}$ =Volume of vent stream entering the control device during run j at standard conditions, m<sup>3</sup>.

$V_{bj}$ =Volume of vent stream exiting the control device during run j at standard conditions, m<sup>3</sup>.

$C_{ai}$ =Organic concentration of compound i or the benzene concentration measured in the vent stream entering the control device as determined by Method 18, ppm by volume on a dry basis.

$C_{bi}$ =Organic concentration of compound i or the benzene concentration measured in the vent stream exiting the control device as determined by Method 18, ppm by volume on a dry basis.

$MW_i$ =Molecular weight of organic compound i in the vent stream or the molecular weight of benzene, kg/kg-mol.

$n$ =Number of organic compounds in the vent stream; if benzene reduction efficiency is being demonstrated, then  $n=1$ .

$K$ =Conversion factor for molar volume=0.0416 kg-mol/m<sup>3</sup> (at 293°K and 760 mm Hg).

$10^{-6}$ =Conversion from ppm, ppm<sup>-1</sup>.

(iv) The mass flow rate of organics or benzene entering and exiting the control device shall be calculated as follows:

$$E_a - \left( \sum_{j=1}^n M_{aj} \right) / T$$

$$E_b - \left( \sum_{j=1}^n M_{bj} \right) / T$$

Where:

$E_a$ =Mass flow rate of organics or benzene entering the control device, kg/hour.

$E_b$ =Mass flow rate of organics or benzene exiting the control device, kg/hour.

$M_{aj}$ =Mass of organics or benzene in the vent stream entering the control device during run j, kg.

$M_{bj}$ =Mass of organics or benzene in vent stream exiting the control device during run j, kg.

$T$ =Total time of all runs, hour.

$n$ =Number of runs.

(4) The organic reduction efficiency or the benzene reduction efficiency for the control device shall be calculated as follows:

$$R = \frac{E_a - E_b}{E_a} \times 100$$

Where:

$R$ =Total organic reduction efficiency or benzene reduction efficiency for the control device, percent.

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$E_a$ =Mass flow rate of organics or benzene entering the control device, kg/hr.

$E_b$ =Mass flow rate of organics or benzene exiting the control device, kg/hr.

(j) An owner or operator shall determine the benzene quantity for the purposes of the calculation required by §61.342 (c)(3)(ii)(B) according to the provisions of paragraph (a) of this section, except that the procedures in paragraph (a) of this section shall also apply to wastes with a water content of 10 percent or less.

(k) An owner or operator shall determine the benzene quantity for the purposes of the calculation required by §61.342(e)(2) by the following procedure:

(1) For each waste stream that is not controlled for air emissions in accordance with §61.343, 61.344, 61.345, 61.346, 61.347, or 61.348(a), as applicable to the waste management unit that manages the waste, the benzene quantity shall be determined as specified in paragraph (a) of this section, except that paragraph (b)(4) of this section shall not apply, i.e., the waste quantity for process unit turnaround waste is not annualized but shall be included in the determination of benzene quantity for the year in which the waste is generated for the purposes of the calculation required by §61.342(e)(2).

(2) For each waste stream that is controlled for air emissions in accordance with §61.343, 61.344, 61.345, 61.346, 61.347, or 61.348(a), as applicable to the waste management unit that manages the waste, the determination of annual waste quantity and flow-weighted annual average benzene concentration shall be made at the first applicable location as described in paragraphs (k)(2)(i), (k)(2)(ii), and (k)(2)(iii) of this section and prior to any reduction of benzene concentration through volatilization of the benzene, using the methods given in (k)(2)(iv) and (k)(2)(v) of this section.

(i) Where the waste stream enters the first waste management unit not complying with §§61.343, 61.344, 61.345, 61.346, 61.347, and 61.348(a) that are applicable to the waste management unit,

(ii) For each waste stream that is managed or treated only in compliance

with §§61.343 through 61.348(a) up to the point of final direct discharge from the facility, the determination of benzene quantity shall be prior to any reduction of benzene concentration through volatilization of the benzene, or

(iii) For wastes managed in units controlled for air emissions in accordance with §§61.343, 61.344, 61.345, 61.346, 61.347, and 61.348(a), and then transferred offsite, facilities shall use the first applicable offsite location as described in paragraphs (k)(2)(i) and (k)(2)(ii) of this section if they have documentation from the offsite facility of the benzene quantity at this location. Facilities without this documentation for offsite wastes shall use the benzene quantity determined at the point where the transferred waste leaves the facility.

(iv) Annual waste quantity shall be determined using the procedures in paragraphs (b)(5), (6), or (7) of this section, and

(v) The flow-weighted annual average benzene concentration shall be determined using the procedures in paragraphs (c)(2) or (3) of this section.

(3) The benzene quantity in a waste stream that is generated less than one time per year, including process unit turnaround waste, shall be included in the determination of benzene quantity as determined in paragraph (k)(6) of this section for the year in which the waste is generated. The benzene quantity in this waste stream shall not be annualized or averaged over the time interval between the activities that resulted in generation of the waste for purposes of determining benzene quantity as determined in paragraph (k)(6) of this section.

(4) The benzene in waste entering an enhanced biodegradation unit, as defined in §61.348(b)(2)(ii)(B), shall not be included in the determination of benzene quantity, determined in paragraph (k)(6) of this section, if the following conditions are met:

(i) The benzene concentration for each waste stream entering the enhanced biodegradation unit is less than 10 ppmw on a flow-weighted annual average basis, and

(ii) All prior waste management units managing the waste comply with

§§ 61.343, 61.344, 61.345, 61.346, 61.347 and 61.348(a).

(5) The benzene quantity for each waste stream in paragraph (k)(2) of this section shall be determined by multiplying the annual waste quantity of each waste stream times its flow-weighted annual average benzene concentration.

(6) The total benzene quantity for the purposes of the calculation required by § 61.342(e)(2) shall be determined by adding together the benzene quantities determined in paragraphs (k)(1) and (k)(5) of this section for each applicable waste stream.

(7) If the benzene quantity determined in paragraph (6) of this section exceeds 6.0 Mg/yr only because of multiple counting of the benzene quantity for a waste stream, the owner or operator may use the following procedures for the purposes of the calculation required by § 61.342(e)(2):

(i) Determine which waste management units are involved in the multiple counting of benzene;

(ii) Determine the quantity of benzene that is emitted, recovered, or removed from the affected units identified in paragraph (k)(7)(i) of this section, or destroyed in the units if applicable, using either direct measurements or the best available estimation techniques developed or approved by the Administrator.

(iii) Adjust the benzene quantity to eliminate the multiple counting of benzene based on the results from paragraph (k)(7)(ii) of this section and determine the total benzene quantity for the purposes of the calculation required by § 61.342(e)(2).

(iv) Submit in the annual report required under § 61.357(a) a description of the methods used and the resulting calculations for the alternative procedure under paragraph (k)(7) of this section, the benzene quantity determination from paragraph (k)(6) of this section, and the adjusted benzene quantity determination from paragraph (k)(7)(iii) of this section.

[55 FR 8346, Mar. 7, 1990; 55 FR 12444, Apr. 3, 1990, as amended at 55 FR 37231, Sept. 10, 1990; 58 FR 3099, Jan. 7, 1993]

#### § 61.356 Recordkeeping requirements.

(a) Each owner or operator of a facility subject to the provisions of this subpart shall comply with the recordkeeping requirements of this section. Each record shall be maintained in a readily accessible location at the facility site for a period not less than two years from the date the information is recorded unless otherwise specified.

(b) Each owner or operator shall maintain records that identify each waste stream at the facility subject to this subpart, and indicate whether or not the waste stream is controlled for benzene emissions in accordance with this subpart. In addition the owner or operator shall maintain the following records:

(1) For each waste stream not controlled for benzene emissions in accordance with this subpart, the records shall include all test results, measurements, calculations, and other documentation used to determine the following information for the waste stream: waste stream identification, water content, whether or not the waste stream is a process wastewater stream, annual waste quantity, range of benzene concentrations, annual average flow-weighted benzene concentration, and annual benzene quantity.

(2) For each waste stream exempt from § 61.342(c)(1) in accordance with § 61.342(c)(3), the records shall include:

(i) All measurements, calculations, and other documentation used to determine that the continuous flow of process wastewater is less than 0.02 liters per minute or the annual waste quantity of process wastewater is less than 10 Mg/yr in accordance with § 61.342(c)(3)(i), or

(ii) All measurements, calculations, and other documentation used to determine that the sum of the total annual benzene quantity in all exempt waste streams does not exceed 2.0 Mg/yr in accordance with § 61.342(c)(3)(ii).

(3) For each facility where process wastewater streams are controlled for benzene emissions in accordance with § 61.342(d) of this subpart, the records shall include for each treated process wastewater stream all measurements, calculations, and other documentation used to determine the annual benzene

quantity in the process wastewater stream exiting the treatment process.

(4) For each facility where waste streams are controlled for benzene emissions in accordance with §61.342(e), the records shall include for each waste stream all measurements, including the locations of the measurements, calculations, and other documentation used to determine that the total benzene quantity does not exceed 6.0 Mg/yr.

(5) For each facility where the annual waste quantity for process unit turnaround waste is determined in accordance with §61.355(b)(5), the records shall include all test results, measurements, calculations, and other documentation used to determine the following information: identification of each process unit at the facility that undergoes turnarounds, the date of the most recent turnaround for each process unit, identification of each process unit turnaround waste, the water content of each process unit turnaround waste, the annual waste quantity determined in accordance with §61.355(b)(5), the range of benzene concentrations in the waste, the annual average flow-weighted benzene concentration of the waste, and the annual benzene quantity calculated in accordance with §61.355(a)(1)(iii) of this section.

(6) For each facility where wastewater streams are controlled for benzene emissions in accordance with §61.348(b)(2), the records shall include all measurements, calculations, and other documentation used to determine the annual benzene content of the waste streams and the total annual benzene quantity contained in all waste streams managed or treated in exempt waste management units.

(c) An owner or operator transferring waste off-site to another facility for treatment in accordance with §61.342(f) shall maintain documentation for each offsite waste shipment that includes the following information: Date waste is shipped offsite, quantity of waste shipped offsite, name and address of the facility receiving the waste, and a copy of the notice sent with the waste shipment.

(d) An owner or operator using control equipment in accordance with

§§61.343 through 61.347 shall maintain engineering design documentation for all control equipment that is installed on the waste management unit. The documentation shall be retained for the life of the control equipment. If a control device is used, then the owner or operator shall maintain the control device records required by paragraph (f) of this section.

(e) An owner or operator using a treatment process or wastewater treatment system unit in accordance with §61.348 of this subpart shall maintain the following records. The documentation shall be retained for the life of the unit.

(1) A statement signed and dated by the owner or operator certifying that the unit is designed to operate at the documented performance level when the waste stream entering the unit is at the highest waste stream flow rate and benzene content expected to occur.

(2) If engineering calculations are used to determine treatment process or wastewater treatment system unit performance, then the owner or operator shall maintain the complete design analysis for the unit. The design analysis shall include for example the following information: Design specifications, drawings, schematics, piping and instrumentation diagrams, and other documentation necessary to demonstrate the unit performance.

(3) If performance tests are used to determine treatment process or wastewater treatment system unit performance, then the owner or operator shall maintain all test information necessary to demonstrate the unit performance.

(i) A description of the unit including the following information: type of treatment process; manufacturer name and model number; and for each waste stream entering and exiting the unit, the waste stream type (e.g., process wastewater, sludge, slurry, etc.), and the design flow rate and benzene content.

(ii) Documentation describing the test protocol and the means by which sampling variability and analytical variability were accounted for in the determination of the unit performance. The description of the test protocol

shall include the following information: sampling locations, sampling method, sampling frequency, and analytical procedures used for sample analysis.

(iii) Records of unit operating conditions during each test run including all key process parameters.

(iv) All test results.

(4) If a control device is used, then the owner or operator shall maintain the control device records required by paragraph (f) of this section.

(f) An owner or operator using a closed-vent system and control device in accordance with §61.349 of this subpart shall maintain the following records. The documentation shall be retained for the life of the control device.

(1) A statement signed and dated by the owner or operator certifying that the closed-vent system and control device is designed to operate at the documented performance level when the waste management unit vented to the control device is or would be operating at the highest load or capacity expected to occur.

(2) If engineering calculations are used to determine control device performance in accordance with §61.349(c), then a design analysis for the control device that includes for example:

(i) Specifications, drawings, schematics, and piping and instrumentation diagrams prepared by the owner or operator, or the control device manufacturer or vendor that describe the control device design based on acceptable engineering texts. The design analysis shall address the following vent stream characteristics and control device operating parameters:

(A) For a thermal vapor incinerator, the design analysis shall consider the vent stream composition, constituent concentrations, and flow rate. The design analysis shall also establish the design minimum and average temperature in the combustion zone and the combustion zone residence time.

(B) For a catalytic vapor incinerator, the design analysis shall consider the vent stream composition, constituent concentrations, and flow rate. The design analysis shall also establish the design minimum and average tempera-

tures across the catalyst bed inlet and outlet.

(C) For a boiler or process heater, the design analysis shall consider the vent stream composition, constituent concentrations, and flow rate. The design analysis shall also establish the design minimum and average flame zone temperatures, combustion zone residence time, and description of method and location where the vent stream is introduced into the flame zone.

(D) For a flare, the design analysis shall consider the vent stream composition, constituent concentrations, and flow rate. The design analysis shall also consider the requirements specified in 40 CFR 60.18.

(E) For a condenser, the design analysis shall consider the vent stream composition, constituent concentration, flow rate, relative humidity, and temperature. The design analysis shall also establish the design outlet organic compound concentration level or the design outlet benzene concentration level, design average temperature of the condenser exhaust vent stream, and the design average temperatures of the coolant fluid at the condenser inlet and outlet.

(F) For a carbon adsorption system that regenerates the carbon bed directly on-site in the control device such as a fixed-bed adsorber, the design analysis shall consider the vent stream composition, constituent concentration, flow rate, relative humidity, and temperature. The design analysis shall also establish the design exhaust vent stream organic compound concentration level or the design exhaust vent stream benzene concentration level, number and capacity of carbon beds, type and working capacity of activated carbon used for carbon beds, design total steam flow over the period of each complete carbon bed regeneration cycle, duration of the carbon bed steaming and cooling/drying cycles, design carbon bed temperature after regeneration, design carbon bed regeneration time, and design service life of carbon.

(G) For a carbon adsorption system that does not regenerate the carbon bed directly on-site in the control device, such as a carbon canister, the design analysis shall consider the vent

stream composition, constituent concentration, flow rate, relative humidity, and temperature. The design analysis shall also establish the design exhaust vent stream organic compound concentration level or the design exhaust vent stream benzene concentration level, capacity of carbon bed, type and working capacity of activated carbon used for carbon bed, and design carbon replacement interval based on the total carbon working capacity of the control device and source operating schedule.

(H) For a control device subject to the requirements of §61.349(a)(2)(iv), the design analysis shall consider the vent stream composition, constituent concentration, and flow rate. The design analysis shall also include all of the information submitted under §61.349 (a)(2)(iv).

(ii) [Reserved]

(3) If performance tests are used to determine control device performance in accordance with §61.349(c) of this subpart:

(i) A description of how it is determined that the test is conducted when the waste management unit or treatment process is operating at the highest load or capacity level. This description shall include the estimated or design flow rate and organic content of each vent stream and definition of the acceptable operating ranges of key process and control parameters during the test program.

(ii) A description of the control device including the type of control device, control device manufacturer's name and model number, control device dimensions, capacity, and construction materials.

(iii) A detailed description of sampling and monitoring procedures, including sampling and monitoring locations in the system, the equipment to be used, sampling and monitoring frequency, and planned analytical procedures for sample analysis.

(iv) All test results.

(g) An owner or operator shall maintain a record for each visual inspection required by §§61.343 through 61.347 of this subpart that identifies a problem (such as a broken seal, gap or other problem) which could result in benzene emissions. The record shall include the

date of the inspection, waste management unit and control equipment location where the problem is identified, a description of the problem, a description of the corrective action taken, and the date the corrective action was completed.

(h) An owner or operator shall maintain a record for each test of no detectable emissions required by §§61.343 through 61.347 and §61.349 of this subpart. The record shall include the following information: date the test is performed, background level measured during test, and maximum concentration indicated by the instrument reading measured for each potential leak interface. If detectable emissions are measured at a leak interface, then the record shall also include the waste management unit, control equipment, and leak interface location where detectable emissions were measured, a description of the problem, a description of the corrective action taken, and the date the corrective action was completed.

(i) For each treatment process and wastewater treatment system unit operated to comply with §61.348, the owner or operator shall maintain documentation that includes the following information regarding the unit operation:

(1) Dates of startup and shutdown of the unit.

(2) If measurements of waste stream benzene concentration are performed in accordance with §61.354(a)(1) of this subpart, the owner or operator shall maintain records that include date each test is performed and all test results.

(3) If a process parameter is continuously monitored in accordance with §61.354(a)(2) of this subpart, the owner or operator shall maintain records that include a description of the operating parameter (or parameters) to be monitored to ensure that the unit will be operated in conformance with these standards and the unit's design specifications, and an explanation of the criteria used for selection of that parameter (or parameters). This documentation shall be kept for the life of the unit.

(4) If measurements of waste stream benzene concentration are performed

in accordance with §61.354(b), the owner or operator shall maintain records that include the date each test is performed and all test results.

(5) Periods when the unit is not operated as designed.

(j) For each control device, the owner or operator shall maintain documentation that includes the following information regarding the control device operation:

(1) Dates of startup and shutdown of the closed-vent system and control device.

(2) A description of the operating parameter (or parameters) to be monitored to ensure that the control device will be operated in conformance with these standards and the control device's design specifications and an explanation of the criteria used for selection of that parameter (or parameters). This documentation shall be kept for the life of the control device.

(3) Periods when the closed-vent system and control device are not operated as designed including all periods and the duration when:

(i) Any valve car-seal or closure mechanism required under §61.349(a)(1)(ii) is broken or the by-pass line valve position has changed.

(ii) The flow monitoring devices required under §61.349(a)(1)(ii) indicate that vapors are not routed to the control device as required.

(4) If a thermal vapor incinerator is used, then the owner or operator shall maintain continuous records of the temperature of the gas stream in the combustion zone of the incinerator and records of all 3-hour periods of operation during which the average temperature of the gas stream in the combustion zone is more than 28°C below the design combustion zone temperature.

(5) If a catalytic vapor incinerator is used, then the owner or operator shall maintain continuous records of the temperature of the gas stream both upstream and downstream of the catalyst bed of the incinerator, records of all 3-hour periods of operation during which the average temperature measured before the catalyst bed is more than 28°C below the design gas stream temperature, and records of all 3-hour periods of operation during which the average

temperature difference across the catalyst bed is less than 80 percent of the design temperature difference.

(6) If a boiler or process heater is used, then the owner or operator shall maintain records of each occurrence when there is a change in the location at which the vent stream is introduced into the flame zone as required by §61.349(a)(2)(i)(C). For a boiler or process heater having a design heat input capacity less than 44 MW, the owner or operator shall maintain continuous records of the temperature of the gas stream in the combustion zone of the boiler or process heater and records of all 3-hour periods of operation during which the average temperature of the gas stream in the combustion zone is more than 28°C below the design combustion zone temperature. For a boiler or process heater having a design heat input capacity greater than or equal to 44 MW, the owner or operator shall maintain continuous records of the parameter(s) monitored in accordance with the requirements of §61.354(c)(5).

(7) If a flare is used, then the owner or operator shall maintain continuous records of the flare pilot flame monitoring and records of all periods during which the pilot flame is absent.

(8) If a condenser is used, then the owner or operator shall maintain records from the monitoring device of the parameters selected to be monitored in accordance with §61.354(c)(6). If concentration of organics or concentration of benzene in the control device outlet gas stream is monitored, then the owner or operator shall record all 3-hour periods of operation during which the concentration of organics or the concentration of benzene in the exhaust stream is more than 20 percent greater than the design value. If the temperature of the condenser exhaust stream and coolant fluid is monitored, then the owner or operator shall record all 3-hour periods of operation during which the temperature of the condenser exhaust vent stream is more than 6°C above the design average exhaust vent stream temperature, or the temperature of the coolant fluid exiting the condenser is more than 6°C above the design average coolant fluid temperature at the condenser outlet.

(9) If a carbon adsorber is used, then the owner or operator shall maintain records from the monitoring device of the concentration of organics or the concentration of benzene in the control device outlet gas stream. If the concentration of organics or the concentration of benzene in the control device outlet gas stream is monitored, then the owner or operator shall record all 3-hour periods of operation during which the concentration of organics or the concentration of benzene in the exhaust stream is more than 20 percent greater than the design value. If the carbon bed regeneration interval is monitored, then the owner or operator shall record each occurrence when the vent stream continues to flow through the control device beyond the predetermined carbon bed regeneration time.

(10) If a carbon adsorber that is not regenerated directly on site in the control device is used, then the owner or operator shall maintain records of dates and times when the control device is monitored, when breakthrough is measured, and shall record the date and time then the existing carbon in the control device is replaced with fresh carbon.

(11) If an alternative operational or process parameter is monitored for a control device, as allowed in § 61.354(e) of this subpart, then the owner or operator shall maintain records of the continuously monitored parameter, including periods when the device is not operated as designed.

(12) If a control device subject to the requirements of § 61.349(a)(2)(iv) is used, then the owner or operator shall maintain records of the parameters that are monitored and each occurrence when the parameters monitored are outside the range of values specified in § 61.349(a)(2)(iv)(C), or other records as specified by the Administrator.

(k) An owner or operator who elects to install and operate the control equipment in § 61.351 of this subpart shall comply with the recordkeeping requirements in 40 CFR 60.115b.

(l) An owner or operator who elects to install and operate the control equipment in § 61.352 of this subpart shall maintain records of the following:

(1) The date, location, and corrective action for each visual inspection re-

quired by 40 CFR 60.693-2(a)(5), during which a broken seal, gap, or other problem is identified that could result in benzene emissions.

(2) Results of the seal gap measurements required by 40 CFR 60.693-2(a).

(m) If a system is used for emission control that is maintained at a pressure less than atmospheric pressure with openings to provide dilution air, then the owner or operator shall maintain records of the monitoring device and records of all periods during which the pressure in the unit is operated at a pressure that is equal to or greater than atmospheric pressure.

[55 FR 8346, Mar. 7, 1990; 55 FR 12444, Apr. 3, 1990; 55 FR 18331, May 2, 1990, as amended at 58 FR 3103, Jan. 7, 1993]

#### § 61.357 Reporting requirements.

(a) Each owner or operator of a chemical plant, petroleum refinery, coke by-product recovery plant, and any facility managing wastes from these industries shall submit to the Administrator within 90 days after January 7, 1993, or by the initial startup for a new source with an initial startup after the effective date, a report that summarizes the regulatory status of each waste stream subject to § 61.342 and is determined by the procedures specified in § 61.355(c) to contain benzene. Each owner or operator subject to this subpart who has no benzene onsite in wastes, products, by-products, or intermediates shall submit an initial report that is a statement to this effect. For all other owners or operators subject to this subpart, the report shall include the following information:

(1) Total annual benzene quantity from facility waste determined in accordance with § 61.355(a) of this subpart.

(2) A table identifying each waste stream and whether or not the waste stream will be controlled for benzene emissions in accordance with the requirements of this subpart.

(3) For each waste stream identified as not being controlled for benzene emissions in accordance with the requirements of this subpart the following information shall be added to the table:

(i) Whether or not the water content of the waste stream is greater than 10 percent;

(ii) Whether or not the waste stream is a process wastewater stream, product tank drawdown, or landfill leachate;

(iii) Annual waste quantity for the waste stream;

(iv) Range of benzene concentrations for the waste stream;

(v) Annual average flow-weighted benzene concentration for the waste stream; and

(vi) Annual benzene quantity for the waste stream.

(4) The information required in paragraphs (a) (1), (2), and (3) of this section should represent the waste stream characteristics based on current configuration and operating conditions. An owner or operator only needs to list in the report those waste streams that contact materials containing benzene. The report does not need to include a description of the controls to be installed to comply with the standard or other information required in §61.10(a).

(b) If the total annual benzene quantity from facility waste is less than 1 Mg/yr, then the owner or operator shall submit to the Administrator a report that updates the information listed in paragraphs (a)(1) through (a)(3) of this section whenever there is a change in the process generating the waste stream that could cause the total annual benzene quantity from facility waste to increase to 1 Mg/yr or more.

(c) If the total annual benzene quantity from facility waste is less than 10 Mg/yr but is equal to or greater than 1 Mg/yr, then the owner or operator shall submit to the Administrator a report that updates the information listed in paragraphs (a)(1) through (a)(3) of this section. The report shall be submitted annually and whenever there is a change in the process generating the waste stream that could cause the total annual benzene quantity from facility waste to increase to 10 Mg/yr or more. If the information in the annual report required by paragraphs (a)(1) through (a)(3) of this section is not changed in the following year, the owner or operator may submit a statement to that effect.

(d) If the total annual benzene quantity from facility waste is equal to or greater than 10 Mg/yr, then the owner or operator shall submit to the Administrator the following reports:

(1) Within 90 days after January 7, 1993, unless a waiver of compliance under §61.11 of this part is granted, or by the date of initial startup for a new source with an initial startup after the effective date, a certification that the equipment necessary to comply with these standards has been installed and that the required initial inspections or tests have been carried out in accordance with this subpart. If a waiver of compliance is granted under §61.11, the certification of equipment necessary to comply with these standards shall be submitted by the date the waiver of compliance expires.

(2) Beginning on the date that the equipment necessary to comply with these standards has been certified in accordance with paragraph (d)(1) of this section, the owner or operator shall submit annually to the Administrator a report that updates the information listed in paragraphs (a)(1) through (a)(3) of this section. If the information in the annual report required by paragraphs (a)(1) through (a)(3) of this section is not changed in the following year, the owner or operator may submit a statement to that effect.

(3) If an owner or operator elects to comply with the requirements of §61.342(c)(3)(ii), then the report required by paragraph (d)(2) of this section shall include a table identifying each waste stream chosen for exemption and the total annual benzene quantity in these exempted streams.

(4) If an owner or operator elects to comply with the alternative requirements of §61.342(d) of this subpart, then he shall include in the report required by paragraph (d)(2) of this section a table presenting the following information for each process wastewater stream:

(i) Whether or not the process wastewater stream is being controlled for benzene emissions in accordance with the requirements of this subpart;

(ii) For each process wastewater stream identified as not being controlled for benzene emissions in accordance with the requirements of this subpart, the table shall report the following information for the process wastewater stream as determined at the point of waste generation: annual waste quantity, range of benzene concentrations, annual average flow-weighted benzene concentration, and annual benzene quantity;

(iii) For each process wastewater stream identified as being controlled for benzene emissions in accordance with the requirements of this subpart, the table shall report the following information for the process wastewater stream as determined at the exit to the treatment process: Annual waste quantity, range of benzene concentrations, annual average flow-weighted benzene concentration, and annual benzene quantity.

(5) If an owner or operator elects to comply with the alternative requirements of §61.342(e), then the report required by paragraph (d)(2) of this section shall include a table presenting the following information for each waste stream:

(i) For each waste stream identified as not being controlled for benzene emissions in accordance with the requirements of this subpart; the table shall report the following information for the waste stream as determined at the point of waste generation: annual waste quantity, range of benzene concentrations, annual average flow-weighted benzene concentration, and annual benzene quantity;

(ii) For each waste stream identified as being controlled for benzene emissions in accordance with the requirements of this subpart; the table shall report the following information for the waste stream as determined at the applicable location described in §61.355(k)(2): Annual waste quantity, range of benzene concentrations, annual average flow-weighted benzene concentration, and annual benzene quantity.

(6) Beginning 3 months after the date that the equipment necessary to comply with these standards has been certified in accordance with paragraph (d)(1) of this section, the owner or oper-

ator shall submit quarterly to the Administrator a certification that all of the required inspections have been carried out in accordance with the requirements of this subpart.

(7) Beginning 3 months after the date that the equipment necessary to comply with these standards has been certified in accordance with paragraph (d)(1) of this section, the owner or operator shall submit a report quarterly to the Administrator that includes:

(i) If a treatment process or wastewater treatment system unit is monitored in accordance with §61.354(a)(1) of this subpart, then each period of operation during which the concentration of benzene in the monitored waste stream exiting the unit is equal to or greater than 10 ppmw.

(ii) If a treatment process or wastewater treatment system unit is monitored in accordance with §61.354(a)(2) of this subpart, then each 3-hour period of operation during which the average value of the monitored parameter is outside the range of acceptable values or during which the unit is not operating as designed.

(iii) If a treatment process or wastewater treatment system unit is monitored in accordance with §61.354(b), then each period of operation during which the flow-weighted annual average concentration of benzene in the monitored waste stream entering the unit is equal to or greater than 10 ppmw and/or the total annual benzene quantity is equal to or greater than 1.0 mg/yr.

(iv) For a control device monitored in accordance with §61.354(c) of this subpart, each period of operation monitored during which any of the following conditions occur, as applicable to the control device:

(A) Each 3-hour period of operation during which the average temperature of the gas stream in the combustion zone of a thermal vapor incinerator, as measured by the temperature monitoring device, is more than 28°C below the design combustion zone temperature.

(B) Each 3-hour period of operation during which the average temperature of the gas stream immediately before the catalyst bed of a catalytic vapor incinerator, as measured by the temperature monitoring device, is more

than 28°C below the design gas stream temperature, and any 3-hour period during which the average temperature difference across the catalyst bed (i.e., the difference between the temperatures of the gas stream immediately before and after the catalyst bed), as measured by the temperature monitoring device, is less than 80 percent of the design temperature difference.

(C) Each 3-hour period of operation during which the average temperature of the gas stream in the combustion zone of a boiler or process heater having a design heat input capacity less than 44 MW, as measured by the temperature monitoring device, is more than 28°C below the design combustion zone temperature.

(D) Each 3-hour period of operation during which the average concentration of organics or the average concentration of benzene in the exhaust gases from a carbon adsorber, condenser, or other vapor recovery system is more than 20 percent greater than the design concentration level of organics or benzene in the exhaust gas.

(E) Each 3-hour period of operation during which the temperature of the condenser exhaust vent stream is more than 6°C above the design average exhaust vent stream temperature, or the temperature of the coolant fluid exiting the condenser is more than 6°C above the design average coolant fluid temperature at the condenser outlet.

(F) Each period in which the pilot flame of a flare is absent.

(G) Each occurrence when there is a change in the location at which the vent stream is introduced into the flame zone of a boiler or process heater as required by § 61.349(a)(2)(i)(C) of this subpart.

(H) Each occurrence when the carbon in a carbon adsorber system that is regenerated directly on site in the control device is not regenerated at the predetermined carbon bed regeneration time.

(I) Each occurrence when the carbon in a carbon adsorber system that is not regenerated directly on site in the control device is not replaced at the predetermined interval specified in § 61.354(c) of this subpart.

(J) Each 3-hour period of operation during which the parameters mon-

itored are outside the range of values specified in § 61.349(a)(2)(iv)(C), or any other periods specified by the Administrator for a control device subject to the requirements of § 61.349(a)(2)(iv).

(v) For a cover and closed-vent system monitored in accordance with § 61.354(g), the owner or operator shall submit a report quarterly to the Administrator that identifies any period in which the pressure in the waste management unit is equal to or greater than atmospheric pressure.

(8) Beginning one year after the date that the equipment necessary to comply with these standards has been certified in accordance with paragraph (d)(1) of this section, the owner or operator shall submit annually to the Administrator a report that summarizes all inspections required by §§ 61.342 through 61.354 during which detectable emissions are measured or a problem (such as a broken seal, gap or other problem) that could result in benzene emissions is identified, including information about the repairs or corrective action taken.

(e) An owner or operator electing to comply with the provisions of §§ 61.351 or 61.352 of this subpart shall notify the Administrator of the alternative standard selected in the report required under § 61.07 or § 61.10 of this part.

(f) An owner or operator who elects to install and operate the control equipment in § 61.351 of this subpart shall comply with the reporting requirements in 40 CFR 60.115b.

(g) An owner or operator who elects to install and operate the control equipment in § 61.352 of this subpart shall submit initial and quarterly reports that identify all seal gap measurements, as required in 40 CFR 60.693-2(a), that are outside the prescribed limits.

[55 FR 8346, Mar. 7 1990; 55 FR 12444, Apr. 3, 1990, as amended at 55 FR 37231, Sept. 10, 1990; 58 FR 3105, Jan. 7, 1993]

#### § 61.358 Delegation of authority.

(a) In delegating implementation and enforcement authority to a State under section 112(d) of the Clean Air Act, the authorities contained in paragraph (b) of this section shall be retained by the Administrator and not transferred to a State.

Environmental Protection Agency

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(b) Alternative means of emission limitation under §61.353 of this subpart will not be delegated to States.

**§61.359 [Reserved]**

APPENDIX A

National Emission Standards for Hazardous Air Pollutants  
Compliance Status Information

I. SOURCE REPORT

INSTRUCTIONS: Owners or operators of sources of hazardous pollutants subject to the National Emission Standards for Hazardous Air Pollutants are required to submit the information contained in Section I to the appropriate U.S. Environmental Protection Agency Regional Office prior to 90 days after the effective date of any standards or amendments which require the submission of such information.

A list of regional offices is provided in §61.04.

A. SOURCE INFORMATION

1. Identification/Location - Indicate the name and address of each source.

|  |    |                  |    |               |            |                            |    |           |                    |              |           |           |   |
|--|----|------------------|----|---------------|------------|----------------------------|----|-----------|--------------------|--------------|-----------|-----------|---|
| 1  | 2  | 3                | 4  | 5             | 8          | 9                          | 13 | 0         | 0                  | 0            | 0         | 0         | 1 |
| <u>Region</u>                                      |    | <u>State</u>     |    | <u>County</u> |            | <u>Source Number</u>       |    | <u>14</u> | <u>16</u>          | <u>17</u>    | <u>18</u> | <u>19</u> |   |
| 20   | 22 | 23               | 26 | 27            |            | Source Name                |    |           |                    | 46           |           |           |   |
| <u>AQCR #</u>                                      |    | <u>City Code</u> |    |               |            |                            |    |           |                    |              |           |           |   |
| 47 <u>Street Address (Location of Plant)</u> 66 80 |    |                  |    |               |            |                            |    |           |                    |              |           |           |   |
| Dup 1-18   |    | 19               |    | 20            |            | <u>City Name</u>           |    | 34        | <u>State</u>       | 35           | 39        |           |   |
|  |    |                  |    | 40            |            | <u>State Regis. Number</u> |    | 54        | 55                 | 58           |           |           |   |
|  |    |                  |    |               |            |                            |    |           | <u>NEDS X Ref.</u> |              |           |           |   |
|  |    |                  |    | 59            |            | <u>SIC</u>                 | 62 | <u>FF</u> | 8                  | 77           | 79        |           |   |
|  |    |                  |    |               |            |                            |    | 64        | <u>A/P</u>         | <u>Staff</u> | 80        |           |   |
|  |    |                  |    |               |            |                            |    | 65        |                    |              |           |           |   |
| Dup 1-18   |    | 5                |    |               |            |                            |    |           |                    |              |           |           |   |
|  |    | 19               |    | <u>CS</u>     | <u>SIP</u> | <u>EC</u>                  | 80 |           |                    |              |           |           |   |
|  |    |                  |    | 30            | 31         | 49                         |    |           |                    |              |           |           |   |

2. Contact - Indicate the name and telephone number of the owner or operator or other responsible official whom EPA may contact concerning this report.

Dup 1-18 <sup>4 1</sup>  
 19 20 21 \_\_\_\_\_ Name \_\_\_\_\_ 43

<sup>44 46</sup>  
 Area Code 47 Number 54 80

3. **Source Description** - Briefly state the nature of the source (e.g., "Chlor-alkali Plant" or "Machine Shop").

Dup 1-18 <sup>4 2</sup>  
 19 20 21 \_\_\_\_\_ Description \_\_\_\_\_ 50

51 \_\_\_\_\_ Continued \_\_\_\_\_ 79 80

4. **Alternative Mailing Address** - Indicate an alternative mailing address if correspondence is to be directed to a location different than that specified above.

Dup 1-18 <sup>4 3</sup>  
 19 20 21 \_\_\_\_\_ Number Street or Box Number \_\_\_\_\_ 45 80

Dup 1-18 <sup>4 4</sup>  
 19 20 21 \_\_\_\_\_ City \_\_\_\_\_ 35 <sup>37 38</sup> State 41 Zip 44 80

5. **Compliance Status** - The emissions from this source \_\_\_ can \_\_\_ cannot meet the emission limitations contained in the National Emission Standards on or prior to 90 days after the effective date of any standards or amendments which require the submission of such information.

Signature of Owner, Operator or Other Responsible Official

**NOTE:** If the emissions from the source will exceed those limits set by the National Emission Standards for Hazardous Air Pollutants, the source will be in violation and subject to Federal enforcement actions unless granted a waiver of compliance by the Administrator of the U.S. Environmental Protection Agency. The information needed for such waivers is listed in Section II of this form.

- B. **PROCESS INFORMATION.** Part B should be completed separately for each point of emission for each hazardous pollutant. [Sources subject to 61.22(1) may omit number 4. below.]

Dup 1-13 <sup>0 0 5</sup>  
 14 16 17 18 19 20 \_\_\_\_\_ SCC \_\_\_\_\_ 27 <sup>28 29</sup> NEDS X Ref <sup>30 31</sup> LS SIP

1. **Pollutant Emitted** - Indicate the type of hazardous pollutant emitted by the process. Indicate "AB" for asbestos, "BE" for beryllium, or "HG" for mercury.

|           |    |            |    |          |
|-----------|----|------------|----|----------|
| 32        | 33 |            |    |          |
| Pollutant | 34 | Regulation | 48 | 49<br>EC |

2. **Process Description** - Provide a brief description of each process (e.g., "hydrogen end box" in a mercury chlor-alkali plant, "grinding machine" in a beryllium machine shop). Use additional sheets if necessary.

|          |                     |    |    |    |
|----------|---------------------|----|----|----|
| 50       | Process Description |    | 74 | 80 |
| Dup 1-18 | 6 1                 |    |    | 50 |
|          | 19                  | 20 | 21 |    |
| 51       |                     |    | 79 | 80 |
| Dup 1-18 | 6 2                 |    |    | 50 |
|          | 19                  | 20 | 21 |    |
| 51       |                     |    | 79 | 80 |

3. **Amount of Pollutant** - Indicate the average weight of the hazardous material named in Item 1 which enters the process in pounds per month (based on the previous twelve months of operation).

|          |     |    |    |          |    |    |
|----------|-----|----|----|----------|----|----|
| Dup 1-18 | 6 3 |    |    | lbs./mo. |    |    |
|          | 19  | 20 | 21 | 27       | 29 | 36 |
|          |     |    |    |          |    | 80 |

4. **Control Devices**
  - a. Indicate the type of pollution control devices, if any, used to reduce the emissions from the process (e.g., venturi scrubber, baghouse, wet cyclone) and the estimated percent of the pollutant which the device removes from the process gas stream.

|          |                     |                         |    |                            |    |
|----------|---------------------|-------------------------|----|----------------------------|----|
| Dup 1-18 | 6 4                 | PRIMARY CONTROL DEVICE: |    | 43                         |    |
|          | 19                  | 20                      | 21 |                            |    |
| 45       | Primary Device Name |                         | 64 | 66                         | 70 |
|          |                     |                         |    | Percent Removal Efficiency | 72 |
|          |                     |                         |    |                            | 79 |

|    |
|----|
| 80 |
|----|

|          |       |                            |    |
|----------|-------|----------------------------|----|
| Dup 1-18 | 6 5   | SECONDARY CONTROL DEVICES: | 45 |
|          | 19 20 | 21                         |    |

|    |                       |    |    |                            |    |          |    |    |    |
|----|-----------------------|----|----|----------------------------|----|----------|----|----|----|
| 47 | Secondary Device Name | 64 | 66 | Percent Removal Efficiency | 70 | % EFFIC. | 72 | 79 | 80 |
|----|-----------------------|----|----|----------------------------|----|----------|----|----|----|

- b. Asbestos Emission Control Devices Only
- i. If a baghouse is specified in Item 4a, give the following information:
- The air flow permeability in cubic feet per minute per square foot of fabric area.  
Air flow permeability = \_\_\_\_\_ cfm/ft<sup>2</sup>
  - The pressure drop in inches water gauge across the filter at which the baghouse is operated.  
Operating pressure drop = \_\_\_\_\_ inches w.g.
  - If the baghouse material contains synthetic fill yarn, check whether this material is / / spun / / or not spun.
  - If the baghouse utilizes a felted fabric, give the minimum thickness in inches and the density in ounces per square yard.  
Thickness = \_\_\_\_\_ inches    Density = \_\_\_\_\_ oz/yd<sup>2</sup>
- ii. If a wet collection device is specified in Item 4a, give the designed unit contacting energy in inches water gauge.
- Unit contacting energy = \_\_\_\_\_ inches w.g.

C. DISPOSAL OF ASBESTOS-CONTAINING WASTES. Part C should be completed separately for each asbestos-containing waste generation operation arising from sources subject to §61.22(a), (c), (e), and (h).

|          |    |    |     |    |    |   |    |    |     |    |            |    |    |     |
|----------|----|----|-----|----|----|---|----|----|-----|----|------------|----|----|-----|
| Dup 1-13 | 14 | 16 | 0 0 | 17 | 18 | 5 | 19 | 20 | SCC | 27 | 28         | 29 | 30 | 31  |
|          |    |    |     |    |    |   |    |    |     |    | NEOS X Ref |    | CS | SIP |

|           |    |    |    |            |    |    |
|-----------|----|----|----|------------|----|----|
| A B       | 32 | 33 | 34 | Regulation | 48 | 49 |
| Pollutant |    |    |    |            |    | EC |

1. Waste Generation - Provide a brief description of each process that generates asbestos-containing waste (e.g. disposal of control device wastes).

50 \_\_\_\_\_ Process Description \_\_\_\_\_ 79 80

2. Asbestos Concentration - Indicate the average percentage asbestos content of these materials.

Dup 1-18 6 1 \_\_\_\_\_ ASBESTOS CONCENTRATION: \_\_\_\_\_ 43 45 \_\_\_\_\_ 48  
 19 20 21

%  
 50 80

3. Amount of Wastes - Indicate the average weight of asbestos-containing wastes disposed of, measured in kg/day.

Dup 1-18 6 2 \_\_\_\_\_ kg/day \_\_\_\_\_ 34 80  
 19 20 21 27 29

4. Control Methods - Indicate the emission control methods used in all stages of waste disposal, from collection, processing, and packaging to transporting and deposition.

Dup 1-18 6 3 \_\_\_\_\_ Primary Control Method \_\_\_\_\_ 43  
 19 20 21

45 \_\_\_\_\_ 79 80

Dup 1-18 6 4 \_\_\_\_\_  
 19 20 21 \_\_\_\_\_ 50

51 \_\_\_\_\_ 79 80

5. Waste Disposal - Indicate the type of disposal site (sanitary landfill, open, covered) or incineration site (municipal, private) where the waste is disposed of and who operates the site (company, private, municipal). State the name and location of the site (closest city or town, county, state).

Dup 1-18 6 5 \_\_\_\_\_ TYPE OF SITE: \_\_\_\_\_ 33 35 \_\_\_\_\_ 50  
 19 20 21

51 \_\_\_\_\_ 79 80



2. Inactivation - After the site is inactivated, indicate the method or methods used to comply with the standard and send a list of the actions that will be undertaken to maintain the inactivated site.

|          |       |    |                       |       |
|----------|-------|----|-----------------------|-------|
| Dup 1-18 | 6 8   |    | COMPLIANCE            |       |
|          | 19 20 | 21 | METHOD/INACTIVE SITE: | 52    |
| 54       |       |    |                       | 79 80 |

II. WAIVER REQUESTS

A. Waiver of Compliance. Owners or operators of sources unable to operate in compliance with the National Emission Standards for Hazardous Air Pollutants prior to 90 days after the effective date of any standards or amendments which require the submission of such information may request a waiver of compliance from the Administrator of the U.S. Environmental Protection Agency for the time period necessary to install appropriate control devices or make modifications to achieve compliance. The Administrator may grant a waiver of compliance with the standard for a period not exceeding two years from the effective date of the hazardous pollutant standards, if he finds that such period is necessary for the installation of controls and that steps will be taken during the period of the waiver to assure that the health of persons will be protected from imminent endangerment. The report information provided in Section I must accompany this application. Applications should be sent to the appropriate EPA regional office.

- 1. Processes Involved—Indicate the process or processes emitting hazardous pollutants to which emission controls are to be applied.
2. Controls
a. Describe the proposed type of control device to be added or modification to be made to the process to reduce the emission of hazardous pollutants to an acceptable level.
b. Describe the measures that will be taken during the waiver period to assure that the health of persons will be protected from imminent endangerment.
3. Increments of Progress—Specify the dates by which the following increments of progress will be met.
Date by which contracts for emission control systems or process modifications will be awarded; or date by which orders will be issued for the purchase of the component parts to accomplish emission control or process modification.

Dup 1-16 0 1 7
17 19 53 54 55 60 61 MO/DY/YR 66 80

Date of initiation of on-site construction or installation of emission control equipment or process change.

Dup 1-16 0 2 7
17 19 53 54 55 60 61 MO/DY/YR 66 80

Date by which on-site construction or installation of emission control equipment or process modification is to be completed.

Dup 1-16 0 3 7
17 19 53 54 55 60 61 MO/DY/YR 66 80

Date by which final compliance is to be achieved.

Dup 1-16 0 4 7
17 19 53 54 55 60 61 MO/DY/YR 66 80

B. Waiver of Emission Tests. A waiver of emission testing may be granted to owners or operators of sources subject to emission testing if, in the judgment of the Administrator of the Environmental Protection Agency the emissions from the source comply with the appropriate standard or if the owners or operators of the source have requested a waiver of compliance or have been granted a waiver of compliance.

This application should accompany the report information provided in Section I.

- 1. Reason—State the reasons for requesting a waiver of emission testing. If the reason stated is that the emissions from the source are within the prescribed limits, documentation of this condition must be attached.

\_\_\_\_\_
\_\_\_\_\_
Date \_\_\_\_\_

Signature of the owner or operator \_\_\_\_\_
(Sec. 114, of the Clean Air Act as amended (42 U.S.C. 7414))
[40 FR 48303, Oct. 14, 1975, as amended at 43 FR 8800, Mar. 3, 1978; 50 FR 46295, Sept. 9, 1985]

APPENDIX B TO PART 61—TEST METHODS

- Method 101—Determination of particulate and gaseous mercury emissions from chlor-alkali plants—air streams
Method 101A—Determination of particulate and gaseous mercury emissions from sewage sludge incinerators
Method 102—Determination of particulate and gaseous mercury emissions from chlor-alkali plants—hydrogen streams
Method 103—Beryllium screening method
Method 104—Determination of beryllium emissions from stationary sources

Method 105—Determination of mercury in wastewater treatment plant sewage sludges

Method 106—Determination of vinyl chloride from stationary sources

Method 107—Determination of vinyl chloride content of inprocess wastewater samples, and vinyl chloride content of polyvinyl chloride resin, slurry, wet cake, and latex samples

Method 107A—Determination of vinyl chloride content of solvents, resin-solvent solution, polyvinyl chloride resin, resin slurry, wet resin, and latex samples

Method 108—Determination of particulate and gaseous arsenic emissions

Method 108A—Determination of arsenic content in ore samples from nonferrous smelters

Method 108B—Determination of arsenic content in ore samples from nonferrous smelters

Method 108C—Determination of arsenic content in ore samples from nonferrous smelters

Method 111—Determination of Polonium—210 emissions from stationary sources

METHOD 101—DETERMINATION OF PARTICULATE AND GASEOUS MERCURY EMISSIONS FROM CHLOR-ALKALI PLANTS—AIR STREAMS

### 1. *Applicability and Principle*

1.1 *Applicability.* This method applies to the determination of particulate and gaseous mercury (Hg) emissions from chlor-alkali plants and other sources (as specified in the regulations), where the carrier-gas stream in the duct or stack is principally air.

1.2 *Principle.* Particulate and gaseous Hg emissions are withdrawn isokinetically from the source and collected in acidic iodine monochloride (ICl) solution. The Hg collected (in the mercuric form) is reduced to elemental Hg, which is then aerated from the solution into an optical cell and measured by atomic absorption spectrophotometry.

### 2. *Range and Sensitivity*

2.1 *Range.* After initial dilution, the range of this method is 0.5 to 120 µg Hg/ml. The upper limit can be extended by further dilution of the sample.

2.2 *Sensitivity.* The sensitivity of this method depends on the recorder/spectrophotometer combination selected.

### 3. *Interfering Agents*

3.1 *Sampling.* SO<sub>2</sub> reduces ICl and causes premature depletion of the ICl solution.

3.2 *Analysis.* ICl concentrations greater than 10<sup>-4</sup> molar inhibit the reduction of the Hg (II) ion in the aeration cell. Condensation of water vapor on the optical cell windows causes a positive interference.

### 4. *Precision and Accuracy*

The following estimates are based on collaborative tests, wherein 13 laboratories per-

formed duplicate analyses on two Hg-containing samples from a chlor-alkali plant and on one laboratory-prepared sample of known Hg concentration. The concentration ranged from 2 to 65 µg Hg/ml.

4.1 *Precision.* The estimated within-laboratory and between-laboratory standard deviations are 1.6 and 1.8 µg Hg/ml, respectively.

4.2 *Accuracy.* The participating laboratories that analyzed a 64.3-µg Hg/ml (in 0.1 M ICl) standard obtained a mean of 63.7 µg Hg/ml.

### 5. *Apparatus*

5.1 *Sampling Train.* A schematic of the sampling train is shown in Figure 101-1; it is similar to the Method 5 train (mention of Method 5 refers to part 60 of 40 CFR). The sampling train consists of the following components:

5.1.1 *Probe Nozzle, Pitot Tube, Differential Pressure Gauge, Metering System, Barometer, and Gas Density Determination Equipment.* Same as Method 5, Sections 2.1.1, 2.1.3, 2.1.4, 2.1.8, 2.1.9, and 2.1.10, respectively.

5.1.2 *Probe Liner.* Borosilicate or quartz glass tubing. The tester may use a heating system capable of maintaining a gas temperature of 120±14° C (248±25° F) at the probe exit during sampling to prevent water condensation.

NOTE: Do not use metal probe liners.

5.1.3 *Impingers.* Four Greenburg-Smith impingers connected in series with leak-free ground glass fittings or any similar leak-free noncontaminating fittings. For the first, third, and fourth impingers, the tester may use impingers that are modified by replacing the tip with a 13-mm-ID (0.5-in.) glass tube extending to 13 mm (0.5 in.) from the bottom of the flask.

5.1.4 *Acid Trap.* Mine Safety Appliances air line filter, Catalog number 81857, with acid absorbing cartridge and suitable connections, or equivalent.

5.2 *Sample Recovery.* The following items are needed:

5.2.1 *Glass Sample Bottles.* Leakless, with Teflon-lined caps, 1000- and 100-ml.

5.2.2 *Graduated Cylinder.* 250-ml.

5.2.3 *Funnel and Rubber Policeman.* To aid in transfer of silica gel to container; not necessary if silica gel is weighed in the field.

5.2.4 *Funnel.* Glass, to aid in sample recovery.

5.3 *Sample Preparation and Analysis.* The following equipment is needed:

5.3.1 *Atomic Absorption Spectrophotometer.* Perkin-Elmer 303, or equivalent, containing a hollow-cathode mercury lamp and the optical cell described in Section 5.3.2.

5.3.2 *Optical Cell.* Cylindrical shape with quartz end windows and having the dimensions shown in Figure 101-2. Wind the cell with approximately 2 meters of 24-gauge

nichrome heating wire, and wrap with fiberglass insulation tape or equivalent; do not let the wires touch each other.

5.3.3 Aeration Cell. Constructed according to the specifications in Figure 101-3. Do not use a glass frit as a substitute for the blown glass bubbler tip shown in Figure 101-3.

5.3.4 Recorder. Matched to output of the spectrophotometer described in Section 5.3.1.

5.3.5 Variable Transformer. To vary the voltage on the optical cell from 0 to 40 volts.

5.3.6 Hood. For venting optical cell exhaust.

5.3.7 Flowmetering Valve.

5.3.8 Flowmeter. Rotameter or equivalent, capable of measuring a gas flow of 1.5 liters/min.

5.3.9 Aeration Gas Cylinder. Nitrogen or dry, Hg-free air, equipped with a single-stage regulator.

5.3.10 Connecting Tubing. Use glass tubing (ungreased ball- and socket-connections are recommended) for all tubing connections between the solution cell and the optical cell; do not use Tygon tubing, other types of flexible tubing, or metal tubing as substitutes. The tester may use Teflon, steel, or copper tubing between the nitrogen tank and flowmetering valve (5.3.7), and Tygon, gum, or rubber tubing between the flowmetering valve and the aeration cell.

5.3.11 Flow Rate Calibration Equipment. Bubble flowmeter or wet test meter for measuring a gas flow rate of  $1.5 \pm 0.1$  liters/min.

5.3.12 Volumetric Flasks. Class A with penny head standard taper stoppers; 100-, 250-, 500- and 1000-ml.

5.3.13 Volumetric Pipets. Class A; 1-, 2-, 3-, 4-, and 5-ml.

5.3.14 Graduated Cylinder. 50-ml.

5.3.15 Magnetic Stirrer. General-purpose laboratory type.

5.3.16 Magnetic Stirring Bar. Teflon-coated.

5.3.17 Balance. Capable of weighing to  $\pm 0.5$  g.

5.4 Alternative Analytical Apparatus. Alternative systems are allowable as long as they meet the following criteria:

5.4.1 A linear calibration curve is generated and two consecutive samples of the same aliquot size and concentration agree within 3 percent of their average.

5.4.2 A minimum of 95 percent of the spike is recovered when an aliquot of a source sample is spiked with a known concentration of mercury (II) compound.

5.4.3 The reducing agent should be added after the aeration cell is closed.

5.4.4 The aeration bottle bubbler should not contain a frit.

5.4.5 Any Tygon used should be as short as possible and conditioned prior to use until blanks and standards yield linear and reproducible results.

5.4.6 If manual stirring is done before aeration, it should be done with the aeration cell closed.

5.4.7 A drying tube should not be used unless it is conditioned as the Tygon above.

## 6. Reagents

Use ACS reagent-grade chemicals or equivalent, unless otherwise specified.

6.1 Sampling and Recovery. The reagents used in sampling and recovery are as follows:

6.1.1 Water. Deionized distilled, meeting ASTM Specifications for Type I Reagent Water—ASTM Test Method D1193-77 (incorporated by reference—see §61.18). If high concentrations of organic matter are not expected to be present, the analyst may eliminate the  $\text{KMnO}_4$  test for oxidizable organic matter. Use this water in all dilutions and solution preparations.

6.1.2 Nitric Acid ( $\text{HNO}_3$ ), 50 Percent (V/V). Mix equal volumes of concentrated  $\text{HNO}_3$  and deionized distilled water, being careful to slowly add the acid to the water.

6.1.3 Silica Gel. Indicating type, 6- to 16-mesh. If previously used, dry at  $175^\circ\text{C}$  ( $350^\circ\text{F}$ ) for 2 hours. The tester may use new silica gel as received.

6.1.4 Potassium Iodide (KI) Solution, 25 Percent. Dissolve 250 g of KI in deionized distilled water and dilute to 1 liter.

6.1.5 Iodine Monochloride (ICl) Stock Solution, 1.0 M. To 800 ml of 25 percent KI solution, add 800 ml of concentrated hydrochloric acid (HCl). Cool to room temperature. With vigorous stirring, slowly add 135 g of potassium iodate ( $\text{KIO}_3$ ) and stir until all free iodine has dissolved. A clear orange-red solution occurs when all the  $\text{KIO}_3$  has been added. Cool to room temperature and dilute to 1800 ml with deionized distilled water. Keep the solution in amber glass bottles to prevent degradation.

6.1.6 Absorbing Solution, 0.1 M ICl. Dilute 100 ml of the 1.0 M ICl stock solution to 1 liter with deionized distilled water. Keep the solution in amber glass bottles and in darkness to prevent degradation. This reagent is stable for at least 2 months.

6.2 Sample Preparation and Analysis. The reagents needed are listed below:

6.2.1 Tin (II) Solution. Prepare fresh daily and keep sealed when not being used. Completely dissolve 20 g of tin (II) chloride [or 25 g of tin (II) sulfate] crystals (Baker Analyzed reagent grade or any other brand that will give a clear solution) in 25 ml of concentrated HCl. Dilute to 250 ml with deionized distilled water. Do not substitute  $\text{HNO}_3$ ,  $\text{H}_2\text{SO}_4$ , or other strong acids for the HCl.

6.2.2 Mercury Stock Solution, 1 mg Hg/ml. Prepare and store all mercury standard solutions in borosilicate glass containers. Completely dissolve 0.1354 g of mercury (II) chloride in 75 ml of deionized distilled water in a 100 ml glass volumetric flask. Add 10 ml of

concentrated HNO<sub>3</sub>, and adjust the volume to exactly 100 ml with deionized distilled water. Mix thoroughly. This solution is stable for at least 1 month.

6.2.3 Sulfuric Acid, 5 Percent (V/V). Dilute 25 ml of concentrated H<sub>2</sub>SO<sub>4</sub> to 500 ml with deionized distilled water.

6.2.4 Intermediate Mercury Standard Solution, 10 µg Hg/ml. Prepare fresh weekly. Pipet 5.0 ml of the mercury stock solution (6.2.2) into a 500-ml glass volumetric flask and add 20 ml of the 5 percent H<sub>2</sub>SO<sub>4</sub> solution. Dilute to exactly 500 ml with deionized distilled water. Thoroughly mix the solution.

6.2.5 Working Mercury Standard Solution, 200 ng Hg/ml. Prepare fresh daily. Pipet 5.0 ml from the "Intermediate Mercury Standard Solution" (6.2.4) into a 250-ml volumetric glass flask. Add 10 ml of the 5 percent H<sub>2</sub>SO<sub>4</sub> and 2 ml of the 0.1 M ICl absorbing solution taken as a blank (7.2.3) and dilute to 250 ml with deionized distilled water. Mix thoroughly.

#### 7. Procedure

7.1 Sampling. Because of the complexity of this method, testers should be trained and experienced with the test procedures to assure reliable results. Since the amount of Hg that is collected generally is small, the method must be carefully applied to prevent contamination or loss of sample.

7.1.1 Pretest Preparation. Follow the general procedure given in Method 5, Section 4.1.1, except omit the directions on the filter.

7.1.2 Preliminary Determinations. Follow the general procedure given in Method 5, Section 4.1.2, except as follows: Select a nozzle size based on the range of velocity heads to assure that it is not necessary to change the nozzle size in order to maintain isokinetic sampling rates below 28 liters/min (1.0 cfm).

Obtain samples over a period or periods that accurately determine the maximum emissions that occur in a 24-hour period. In the case of cyclic operations, run sufficient tests for the accurate determination of the emissions that occur over the duration of the cycle. A minimum sample time of 2 hours is recommended. In some instances, high Hg or high SO<sub>2</sub> concentrations make it impossible to sample for the desired minimum time. This is indicated by reddening (liberation of free iodine) in the first impinger. In these cases, the tester may divide the sample run into two or more subruns to insure that the absorbing solution is not depleted.

7.1.3 Preparation of Sampling Train. Clean all glassware [probe, impingers, and connectors] by rinsing with 50 percent HNO<sub>3</sub>, tap water, 0.1 M ICl, tap water, and finally deionized distilled water. Place 100 ml of 0.1 M ICl in each of the first three impingers. Take care to prevent the absorbing solution from contacting any greased surfaces. Place approximately 200 g of preweighed silica gel

in the fourth impinger. The tester may use more silica gel, but should be careful to ensure that it is not entrained and carried out from the impinger during sampling. Place the silica gel container in a clean place for later use in the sample recovery. Alternatively, determine and record the weight of the silica gel plus impinger to the nearest 0.5 g.

Install the selected nozzle using a Viton A O-ring when stack temperatures are less than 260° C (500° F). Use a fiberglass string gasket if temperatures are higher. See APTD-0576 (Citation 9 in Section 10) for details. Other connecting systems using either 316 stainless steel or Teflon ferrules may be used. Mark the probe with heat-resistant tape or by some other method to denote the proper distance into the stack or duct for each sampling point. Assemble the train as shown in Figure 101-1, using (if necessary) a very light coat of silicone grease on all ground glass joints. Grease only the outer portion (see APTD-0576) to avoid possibility of contamination by the silicone grease.

NOTE: An empty impinger may be inserted between the third impinger and the silica gel to remove excess moisture from the sample stream.

After the sampling train has been assembled, turn on and set the probe, if applicable, at the desired operating temperature. Allow time for the temperatures to stabilize. Place crushed ice around the impingers.

7.1.4 Leak-Check Procedures. Follow the leak-check procedures outlined in Method 5, Sections 4.1.4.1 (Pretest Leak Check), 4.1.4.2 (Leak Checks During Sample Run), and 4.1.4.3 (Post-Test Leak Check).

7.1.5 Mercury Train Operation. Follow the general procedure given in Method 5, Section 4.1.5. For each run, record the data required on a data sheet such as the one shown in Figure 101-4.

7.1.6 Calculation of Percent Isokinetic. Same as Method 5, Section 4.1.6.

7.2 Sample Recovery. Begin proper clean-up procedure as soon as the probe is removed from the stack at the end of the sampling period.

Allow the probe to cool. When it can be safely handled, wipe off any external particulate matter near the tip of the probe nozzle and place a cap over it. Do not cap off the probe tip tightly while the sampling train is cooling. Capping would create a vacuum and draw liquid out from the impingers.

Before moving the sampling train to the cleanup site, remove the probe from the train, wipe off the silicone grease, and cap the open outlet of the probe. Be careful not to lose any condensate that might be present. Wipe off the silicone grease from the impinger. Use either ground-glass stoppers, plastic caps, or serum caps to close these openings.

Transfer the probe and impinger assembly to a cleanup area that is clean, protected from the wind, and free of Hg contamination. The ambient air in laboratories located in the immediate vicinity of Hg-using facilities is not normally free of Hg contamination.

Inspect the train before and during assembly, and note any abnormal conditions. Treat the sample as follows:

7.2.1 Container No. 1 (Impinger and Probe). Using a graduated cylinder, measure the liquid in the first three impingers to within  $\pm 1$  ml. Record the volume of liquid present (e.g., see Figure 5-3 of Method 5). This information is needed to calculate the moisture content of the effluent gas. (Use only glass storage bottles and graduated cylinders that have been pre-cleaned as in Section 7.1.3.) Place the contents of the first three impingers into a 1000-ml glass sample bottle.

Taking care that dust on the outside of the probe or other exterior surfaces does not get into the sample, quantitatively recover the Hg (and any condensate) from the probe nozzle, probe fitting, and probe liner as follows: Rinse these components with two 50-ml portions of 0.1 M ICI. Next, rinse the probe nozzle, fitting and liner, and each piece of connecting glassware between the probe liner and the back half of the third impinger with a maximum of 400 ml of deionized distilled water. Add all washings to the 1000-ml glass sample bottle containing the liquid from the first three impingers.

After all washings have been collected in the sample container, tighten the lid on the container to prevent leakage during shipment to the laboratory. Mark the height of the liquid to determine later whether leakage occurred during transport. Label the container to clearly identify its contents.

7.2.2 Container No. 2 (Silica Gel). Note the color of the indicating silica gel to determine whether it has been completely spent and make a notation of its condition. Transfer the silica gel from its impinger to its original container and seal. The tester may use as aids a funnel to pour the silica gel and a rubber policeman to remove the silica gel from the impinger. The small amount of particles that may adhere to the impinger wall need not be removed. Since the gain in weight is to be used for moisture calculations, do not use any water or other liquids to transfer the silica gel. If a balance is available in the field, weigh the spent silica gel (or silica gel plus impinger) to the nearest 0.5 g; record this weight.

7.2.3 Container No. 3 (Absorbing Solution Blank). For a blank, place 50 ml of the 0.1 M ICI absorbing solution in a 100-ml sample bottle. Seal the container. Use this blank to prepare the working mercury standard solution (6.2.5).

7.3 Sample Preparation. Check the liquid level in each container to see whether liquid

was lost during transport. If a noticeable amount of leakage occurred, either void the sample or use methods subject to the approval of the Administrator to account for the losses. Then follow the procedures below:

7.3.1 Container No. 1 (Impinger and Probe). Carefully transfer the contents of Container No. 1 into a 1000-ml volumetric flask and adjust the volume to exactly 1000 ml with deionized distilled water.

7.3.2 Dilutions. Pipet a 2-ml aliquot from the diluted sample from 7.3.1 into a 250-ml volumetric flask. Add 10 ml of 5 percent  $H_2SO_4$  and adjust the volume to exactly 250 ml with deionized distilled water. These solutions are stable for at least 72 hours.

NOTE: The dilution factor will be  $250/2$  for this solution.

7.4 Analysis. Calibrate the spectrophotometer and recorder and prepare the calibration curve as described in Sections 8.1 to 8.2.

7.4.1 Mercury Samples. Repeat the procedure used to establish the calibration curve with appropriately sized aliquots (1 to 5 ml) of each of the diluted samples (from Section 7.3.2) until two consecutive peak heights agree within  $\pm 3$  percent of their average value. The peak maximum of an aliquot (except the 5-ml aliquot) must be greater than 10 percent of the recorder full scale. If the peak maximum of a 1.0-ml aliquot is off scale on the recorder, further dilute the original source sample to bring the Hg concentration into the calibration range of the spectrophotometer.

Run a blank and standard at least after every five samples to check the spectrophotometer calibration; recalibrate as necessary.

It is also recommended that at least one sample from each stack test be checked by the Method of Standard Additions to confirm that matrix effects have not interfered in the analysis.

7.4.2 Container No. 2 (Silica Gel). Weigh the spent silica gel (or silica gel plus impinger) to the nearest 0.5 g using a balance. (This step may be conducted in the field.)

## 8. Calibration and Standards

Before use, clean all glassware, both new and used, as follows: brush with soap and water, liberally rinse with tap water, soak for 1 hour in 50 percent  $HNO_3$ , and then rinse with deionized distilled water.

8.1 Flow Calibration. Assemble the aeration system as shown in Figure 101-5. Set the outlet pressure on the aeration gas cylinder regulator to a minimum pressure of 500 mm Hg (10 psi), and use the flowmetering valve and a bubble flowmeter or wet test meter to obtain a flow rate of  $1.5 \pm 0.1$  liters/min through the aeration cell. After the flow calibration is complete, remove the bubble flowmeter from the system.

8.2 Optical Cell Heating System Calibration. Using a 50-ml graduated cylinder, add

50 ml of deionized distilled water to the bottle section of the aeration cell and attach the bottle section to the bubbler section of the cell. Attach the aeration cell to the optical cell; and while aerating at 1.5 liters/min, determine the minimum variable transformer setting necessary to prevent condensation of moisture in the optical cell and in the connecting tubing. (This setting should not exceed 20 volts.)

8.3 Spectrophotometer and Recorder Calibration. The mercury response may be measured by either peak height or peak area.

NOTE: The temperature of the solution affects the rate at which elemental Hg is released from a solution and, consequently, it affects the shape of the absorption curve (area) and the point of maximum absorbance (peak height). Therefore, to obtain reproducible results, bring all solutions to room temperature before use.

Set the spectrophotometer wavelength at 253.7 nm, and make certain the optical cell is at the minimum temperature that will prevent water condensation. Then set the recorder scale as follows: Using a 50-ml graduated cylinder, add 50 ml of deionized distilled water to the aeration cell bottle and pipet 5.0 ml of the working mercury standard solution into the aeration cell.

NOTE: Always add the Hg-containing solution to the aeration cell after the 50 ml of deionized distilled water.

Place a Teflon-coated stirring bar in the bottle. Before attaching the bottle section to the bubbler section of the aeration cell, make certain that (1) the aeration cell exit arm stopcock (Figure 101-3) is closed (so that Hg will not prematurely enter the optical cell when the reducing agent is being added) and (2) there is no flow through the bubbler. If conditions (1) and (2) are met, attach the bottle section to the bubbler section of the aeration cell. Pipet 5 ml of stannous chloride solution into the aeration cell through the side arm, and immediately stopper the side arm. Stir the solution for 15 sec, turn on the recorder, open the aeration cell exit arm stopcock, and then immediately initiate aeration with continued stirring. Determine the maximum absorbance of the standard and set this value to read 90 percent of the recorder full scale.

8.4 Calibration Curve. After setting the recorder scale, repeat the procedure in Section 8.3 using 0.0-, 1.0-, 2.0-, 3.0-, 4.0-, and 5.0-ml aliquots of the working standard solution (final amount of Hg in the aeration cell is 0, 200, 400, 600, 800, and 1000 ng, respectively). Repeat this procedure on each aliquot size until two consecutive peaks agree within 3 percent of their average value. (Note: To prevent Hg carryover from one sample to another, do not close the aeration gas tank valve and do not disconnect the aeration cell from the optical cell until the recorder pen

has returned to the baseline.) It should not be necessary to disconnect the aeration gas inlet line from the aeration cell when changing samples. After separating the bottle and bubbler sections of the aeration cell, place the bubbler section into a 600-ml beaker containing approximately 400 ml of deionized distilled water. Rinse the bottle section of the aeration cell with a stream of deionized distilled water to remove all traces of the tin (II) reducing agent. Also, to prevent the loss of Hg before aeration, remove all traces of the reducing agent between samples by washing with deionized distilled water. It will be necessary, however, to wash the aeration cell parts with concentrated HCl if any of the following conditions occur: (1) A white film appears on any inside surface of the aeration cell, (2) the calibration curve changes suddenly, or (3) the replicate samples do not yield reproducible results.

Subtract the average peak height (or peak area) of the blank (0.0-ml aliquot)—which should be less than 2 percent of recorder full scale—from the averaged peak heights of the 1.0-, 2.0-, 3.0-, 4.0-, and 5.0-ml aliquot standards. If the blank absorbance is greater than 2 percent of full-scale, the probable cause is Hg contamination of a reagent or carry-over of Hg from a previous sample. Plot the corrected peak height of each standard solution versus the corresponding final total Hg weight in the aeration cell (in ng) and draw the best-fit straight line. This line should either pass through the origin or pass through a point no further from the origin than  $\pm 2$  percent of the recorder full scale. If the line does not pass through or very near to the origin, check for nonlinearity of the curve and for incorrectly prepared standards.

8.5 Sampling Train Calibration. Calibrate the sampling train components according to the procedures outlined in the following sections of Method 5: Section 5.1 (Probe Nozzle), Section 5.2 (Pitot Tube), Section 5.3 (Metering System), Section 5.4 (Probe Heater), Section 5.5 (Temperature Gauges), Section 5.7 (Barometer). Note that the leak-check described in Section 5.6 of Method 5 applies to this method.

## 9. Calculations

9.1 Dry Gas Volume. Using the data from this test, calculate  $V_{m(\text{std})}$ , the dry gas sample volume at standard conditions (corrected for leakage, if necessary) as outlined in Section 6.3 of Method 5.

9.2 Volume of Water Vapor and Moisture Content. Using the data obtained from this test, calculate the volume of water vapor  $V_{w(\text{std})}$  and the moisture content  $B_{ws}$  of the stack gas. Use Equations 5-2 and 5-3 of Method 5.

9.3 Stack Gas Velocity. Using the data from this test and Equation 2-9 of Method 2, calculate the average stack gas velocity  $v_s$ .

9.4 Total Mercury. For each source sample, correct the average maximum absorbance of the two consecutive samples whose peak heights agree within  $\pm 3$  percent of their average for the contribution of the solution blank (see Section 8.4). Use the calibration curve and these corrected averages, to determine the final total weight of mercury in nanograms in the aeration cell for each source sample. Correct for any dilutions made to bring the sample in the working range of the spectrophotometer. Then calculate the Hg in  $\mu\text{g}$  ( $m_{\text{Hg}}$ ) in the original solution as follows:

$$m_{\text{Hg}} = \frac{C_{\text{Hg(AC)}}(D.F.)V_r 10^{-3}}{S}$$

Eq. 101-1

where:

$C_{\text{Hg(AC)}}$ =Total nanograms of mercury in aliquot analyzed (reagent blank subtracted).

D.F.=Dilution factor for the Hg-containing solution (before adding to the aeration cell; e.g., D.F.=250/2 if the source samples were diluted as described in Section 7.3.2).

$V_r$ =Solution volume of original sample, 1000 ml for samples diluted as described in Section 7.2.1.

$10^{-3}$ =Conversion factor,  $\mu\text{g}/\text{ng}$ .

$S$ =Aliquot volume added to aeration cell, ml.

9.5 Mercury Emission Rate. Calculate the Hg emission rate  $R$  in g/day for continuous operations using Equation 101-2. For cyclic operations, use only the time per day each stack is in operation. The total Hg emission rate from a source will be the summation of results from all stacks.

$$R = K \frac{m_{\text{Hg}} v_s A_s (86,400 \times 10^{-6})}{[V_{m(\text{std})} + V_{w(\text{std})}] (T_s / P_s)}$$

Eq. 101-2

where:

$A_s$ =Stack cross-sectional area,  $\text{m}^2$  ( $\text{ft}^2$ ).

86,400=Conversion factor,  $\text{sec}/\text{day}$ .

$10^{-6}$ =Conversion factor,  $\text{g}/\mu\text{g}$ .

$T_s$ =Absolute average stack gas temperature,  $^{\circ}\text{K}$  ( $^{\circ}\text{R}$ ).

$P_s$ =Absolute stack gas pressure, mm Hg (in. Hg).

$K=0.3858$   $^{\circ}\text{K}/\text{mm Hg}$  for metric units.

$=17.64$   $^{\circ}\text{R}/\text{in. Hg}$  for English units.

$v_s$ =Average gas velocity,  $\text{m}/\text{sec}$  ( $\text{ft}/\text{sec}$ ).

$V_{m(\text{std})}$ =Dry gas sample volume at standard conditions,  $\text{scm}$  ( $\text{scf}$ ).

$V_{w(\text{std})}$ =Volume of water vapor at standard conditions,  $\text{scm}$  ( $\text{scf}$ ).

9.6 Isokinetic Variation and Acceptable Results. Same as Method 5, Sections 6.11 and 6.12, respectively.

9.7 Determination of Compliance. Each performance test consists of three repetitions of the applicable test method. For the purpose of determining compliance with an applicable national emission standard, use the average of the results of all repetitions.

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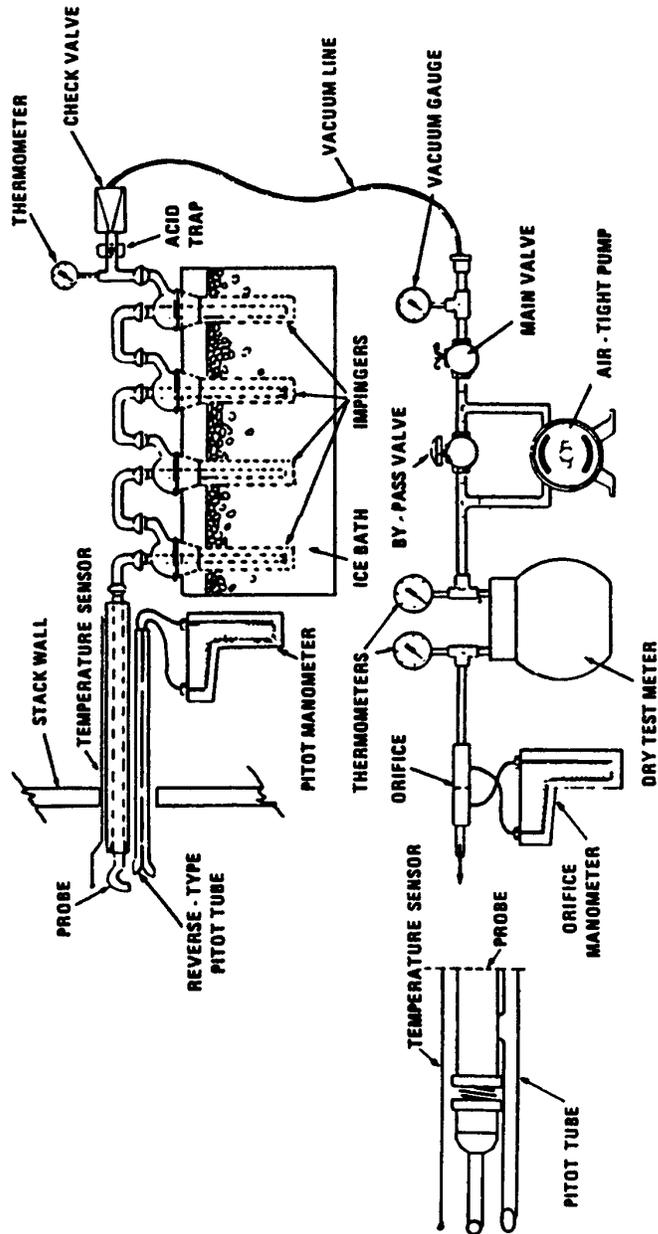


Figure 101-1 Mercury sampling train.

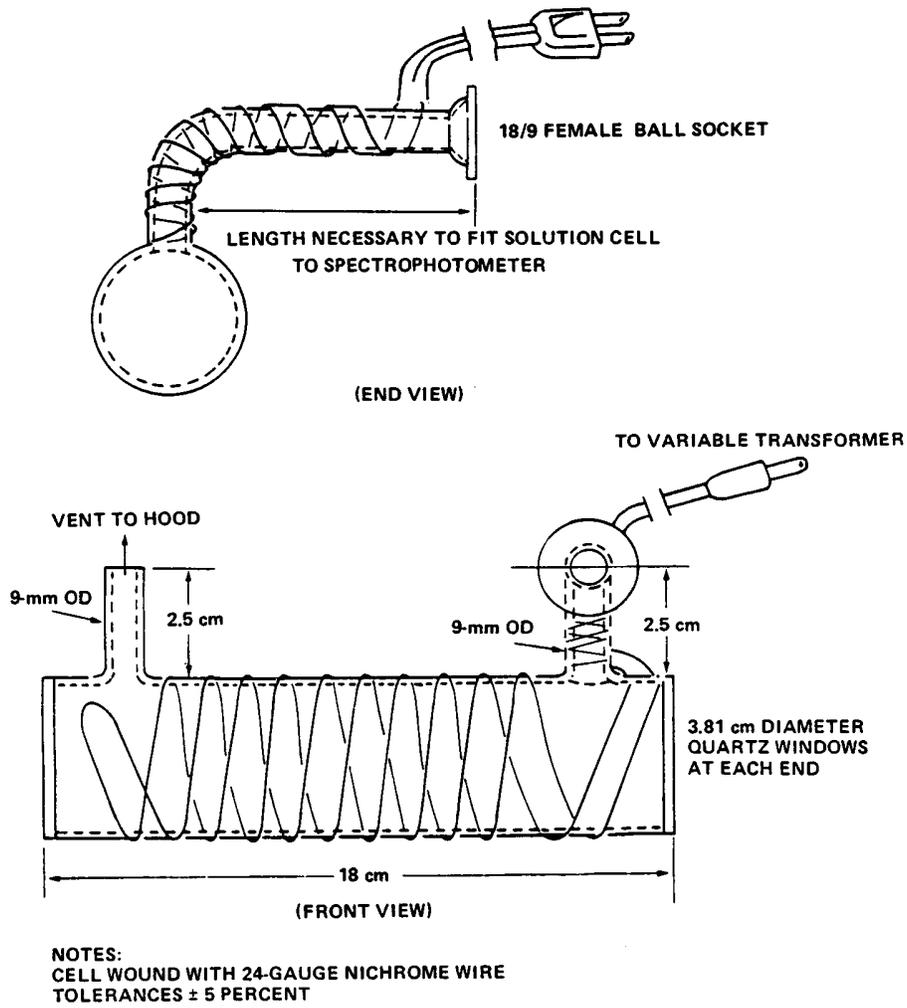


Figure 101-2. Optical cell.

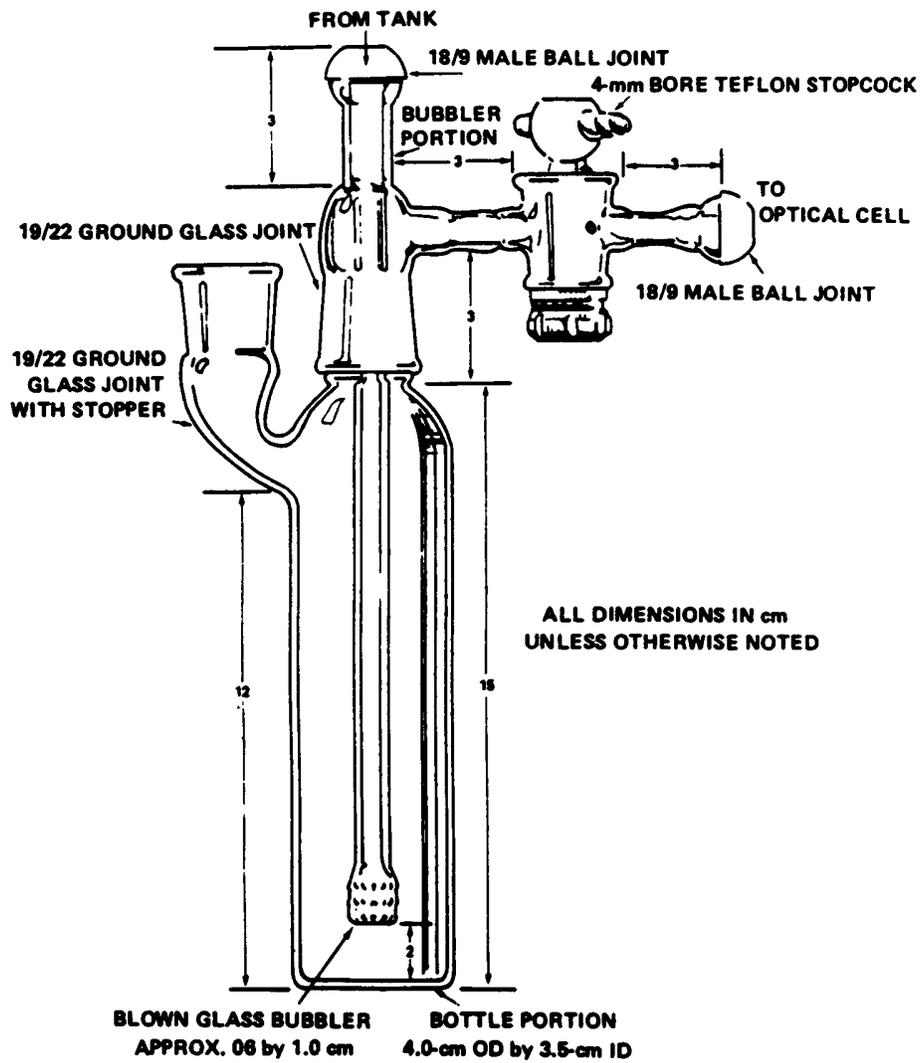


Figure 101-3. Aeration cell.



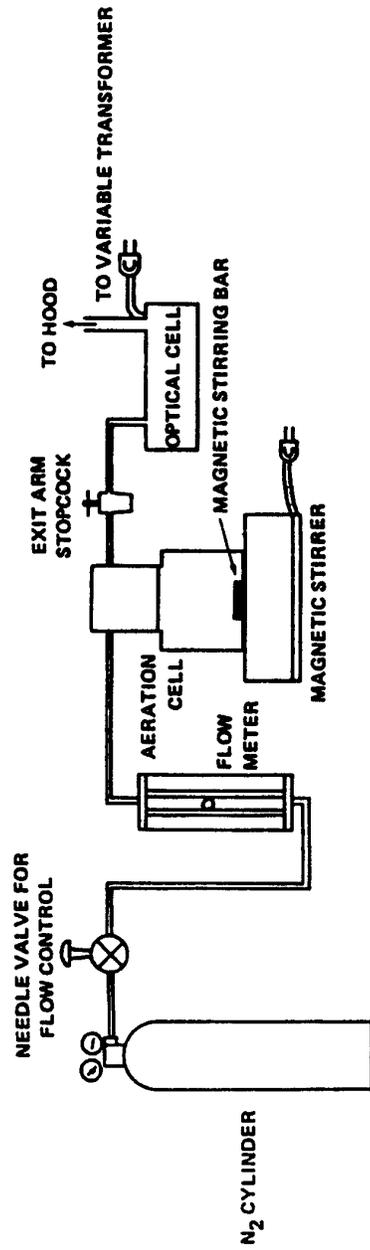


Figure 101-5. Schematic of aeration system.

METHOD 101A—DETERMINATION OF PARTICULATE AND GASEOUS MERCURY EMISSIONS FROM STATIONARY SOURCES

*Introduction*

This method is similar to Method 101, except acidic potassium permanganate solution is used instead of acidic iodine monochloride for collection.

*1. Applicability and Principle*

1.1 *Applicability.* This method applies to the determination of particulate and gaseous mercury (Hg) emissions from sewage sludge incinerators and other sources as specified in the regulations.

1.2 *Principle.* Particulate and gaseous Hg emissions are withdrawn isokinetically from the source and collected in acidic potassium permanganate (KMnO<sub>4</sub>) solution. The Hg collected (in the mercuric form) is reduced to elemental Hg, which is then aerated from the solution into an optical cell and measured by atomic absorption spectrophotometry.

*2. Range and Sensitivity*

2.1 *Range.* After initial dilution, the range of this method is 20 to 800 ng Hg/ml. The upper limit can be extended by further dilution of the sample.

2.2 *Sensitivity.* The sensitivity of the method depends on the recorder/spectrophotometer combination selected.

*3. Interfering Agents*

3.1 *Sampling.* Excessive oxidizable organic matter in the stack gas prematurely depletes the KMnO<sub>4</sub> solution and thereby prevents further collection of Hg.

3.2 *Analysis.* Condensation of water vapor on the optical cell windows causes a positive interference.

*4. Precision*

Based on eight paired-train tests, the within-laboratory standard deviation was estimated to be 4.8 µg Hg/ml in the concentration range of 50 to 130 µg Hg/m<sup>3</sup>.

*5. Apparatus*

5.1 *Sampling Train and Sample Recovery.* Same as Method 101, Sections 5.1 and 5.2, respectively, except for the following variations:

5.1.1 *Probe Liner.* Same as Method 101, Section 5.1.2, except that if a filter is used ahead of the impingers, the tester must use the probe heating system to minimize the condensation of gaseous Hg.

5.1.2 *Filter Holder (Optional).* Borosilicate glass with a rigid stainless-steel wire-screen filter support (do not use glass frit supports) and a silicone rubber or Teflon gasket, designed to provide a positive seal against leakage from outside or around the filter. The filter holder must be equipped with a filter heating system capable of maintaining a temperature around the filter holder of 120 ± 14° C (248 ± 25° F) during sampling to minimize both water and gaseous Hg condensa-

tion. The tester may use a filter in cases where the stream contains large quantities of particulate matter.

5.2 *Analysis.* The apparatus needed for analysis is the same as Method 101, Sections 5.3 and 5.4, except as follows:

5.2.1 *Volumetric Pipets.* Class A; 1-, 2-, 3-, 4-, 5-, 10-, and 20-ml.

5.2.2 *Graduated Cylinder.* 25-ml.

5.2.3 *Steam Bath.*

5.2.4 *Atomic Absorption Spectrophotometer or Equivalent.* Any atomic absorption unit with an open sample presentation area in which to mount the optical cell is suitable. Use those instrument settings recommended by the particular manufacturer. Instruments designed specifically for the measurement of mercury using the cold-vapor technique are commercially available and may be substituted for the atomic absorption spectrophotometer.

5.2.5 *Optical Cell.* Alternatively, a heat lamp mounted above the cell or a moisture trap installed upstream of the cell may be used.

5.2.6 *Aeration Cell.* Alternatively, aeration cells available with commercial cold vapor instrumentation may be used.

5.2.7 *Aeration Gas Cylinder.* Nitrogen, argon, or dry, Hg-free air, equipped with a single-stage regulator. Alternatively, aeration may be provided by a peristaltic metering pump. If a commercial cold vapor instrument is used, follow the manufacturer's recommendations.

*6. Reagents*

Use ACS reagent-grade chemicals or equivalent, unless otherwise specified.

6.1 *Sampling and Recovery.* The reagents used in sampling and recovery are as follows:

6.1.1 *Water.* Deionized distilled, meeting ASTM Specifications for Type I Reagent Water—ASTM Test Method D1193-77 (incorporated by reference—see §61.18). If high concentrations of organic matter are not expected to be present, the analyst may eliminate the KMnO<sub>4</sub> test for oxidizable organic matter. Use this water in all dilutions and solution preparations.

6.1.2 *Nitric Acid (HNO<sub>3</sub>), 50 Percent (V/V).* Mix equal volumes of concentrated HNO<sub>3</sub> and deionized distilled water, being careful to slowly add the acid to the water.

6.1.3 *Silica Gel.* Indicating type, 6- to 16-mesh. If previously used, dry at 175° C (350° F) for 2 hr. The tester may use new silica gel as received.

6.1.4 *Filter (Optional).* Glass fiber filter, without organic binder, exhibiting at least 99.95 percent efficiency on 0.3 µm dioctyl phthalate smoke particles. The tester may use the filter in cases where the gas stream contains large quantities of particulate matter, but he should analyze blank filters for Hg content.

6.1.5 Sulfuric Acid (H<sub>2</sub>SO<sub>4</sub>), 10 Percent (V/V). Carefully add and mix 100 ml of concentrated H<sub>2</sub>SO<sub>4</sub> to 800 ml of deionized distilled water. Then, by adding deionized distilled water, mix and bring to a final volume of 1000 ml.

6.1.6 Absorbing Solution, 4 Percent KMnO<sub>4</sub> (W/V). Prepare fresh daily. Dissolve 40 g of KMnO<sub>4</sub> in sufficient 10 percent H<sub>2</sub>SO<sub>4</sub> to make 1 liter. Prepare and store in glass bottles to prevent degradation.

*Precaution:* To prevent autocatalytic decomposition of the permanganate solution, filter the solution through Whatman 541 filter paper. Also, due to the potential reaction of the potassium permanganate with the acid, there could be pressure buildup in the solution storage bottle; therefore these bottles shall not be fully filled and shall be vented to relieve excess pressure and prevent explosive potentials. Venting is required, but should not allow contamination of the solution; a No. 70-72 hole drilled in the container cap and Teflon liner has been used.

6.1.7 Hydrochloric Acid (HCL). Concentrated. Trace-metals grade is recommended. The Hg level shall be less than 3 ng/ml.

6.1.8 HCL, 8 N. Dilute 67 ml of concentrated HCl to 100 ml with water (slowly add the HCl to the water).

6.2 Analysis. The reagents needed for analysis are listed below:

6.2.1 Tin (II) Solution. Prepare fresh daily and keep sealed when not being used. Completely dissolve 20 g of tin (II) chloride [or 25 g of tin (II) sulfate] crystals (Baker Analyzed reagent grade or any other brand that will give a clear solution) in 25 ml of concentrated HCl. Dilute to 250 ml with deionized distilled water. Do not substitute HNO<sub>3</sub>, H<sub>2</sub>SO<sub>4</sub>, or other strong acids for the HCl.

6.2.2 Sodium Chloride—Hydroxylamine Solution. Dissolve 12 g of sodium chloride and 12 g of hydroxylamine sulfate (or 12 g of hydroxylamine hydrochloride) in deionized distilled water and dilute to 100 ml.

6.2.3 Hydrochloric Acid (HCl), 8 N. Dilute 67 ml of concentrated HCl to 100 ml with deionized distilled water (slowly add the HCl to the water).

6.2.4 Nitric Acid, 15 Percent (V/V). Dilute 15 ml of concentrated HNO<sub>3</sub> to 100 ml with deionized distilled water.

6.2.5 Mercury Stock Solution, 1 mg Hg/ml. Prepare and store all mercury standard solutions in borosilicate glass containers. Completely dissolve 0.1354 g of mercury (II) chloride in 75 ml of deionized distilled water. Add 100 ml of concentrated HNO<sub>3</sub>, and adjust the volume to exactly 100 ml with deionized distilled water. Mix thoroughly. This solution is stable for at least 1 month.

6.2.6 Intermediate Mercury Standard Solution, 10 µg Hg/ml. Prepare fresh weekly. Pipet 5.0 ml of the mercury stock solution

(Section 6.2.5) into a 500-ml volumetric flask and add 20 ml of 15 percent HNO<sub>3</sub> solution. Adjust the volume to exactly 500 ml with deionized distilled water. Thoroughly mix the solution.

6.2.7 Working Mercury Standard Solution, 200 ng Hg/ml. Prepare fresh daily. Pipet 5.0 ml from the "Intermediate Mercury Standard Solution" (Section 6.2.6) into a 250-ml volumetric flask. Add 5 ml of 4 percent KMnO<sub>4</sub> absorbing solution and 5 ml of 15 percent HNO<sub>3</sub>. Adjust the volume to exactly 250 ml with deionized distilled water. Mix thoroughly.

6.2.8 Potassium Permanganate, 5 Percent (W/V). Dissolve 5 g of KMnO<sub>4</sub> in deionized distilled water and dilute to 100 ml.

6.2.9 Filter. Whatman No. 40 or equivalent.

#### 7. Procedure

7.1 Sampling. The sampling procedure is the same as Method 101, except for changes due to the use of KMnO<sub>4</sub> instead of ICl absorbing solution and the possible use of a filter. These changes are as follows:

7.1.1 Preliminary Determinations. The preliminary determinations are the same as those given in Method 101, section 7.1.2, except for the absorbing solution depletion sign. In this method, highly oxidizable matter could make it impossible to sample for the required minimum time. This problem is indicated by the complete bleaching of the purple color of the KMnO<sub>4</sub> solution. In these cases, the tester may divide the sample run into two or more subruns to insure that the absorbing solution would not be depleted. In cases where an excess of water condensation is encountered, collect two runs to make one sample, or add an extra impinger in front of the first impinger (also containing acidified KMnO<sub>4</sub> solution).

7.1.2 Preparation of Sampling Train. The preparation of the sampling train is the same as that given in Method 101, section 7.1.3, except for the cleaning of the glassware [probe, filter holder (if used), impingers, and connectors] and the charging of the first three impingers. In this method, clean all the glass components (a hood is recommended) by rinsing with 50 percent HNO<sub>3</sub>, tap water, 8 N HCl, tap water, and finally deionized distilled water. Then place 50 ml of the acidified 4 percent KMnO<sub>4</sub> absorbing solution in the first impinger and 100 ml in each of the second and third impingers.

If a filter is used, use a pair of tweezers to place the filter in the filter holder. Be sure to center the filter and place the gasket in proper position to prevent the sample gas stream from by-passing the filter. Check the filter for tears after assembly is completed. Be sure also to set the filter heating system at the desired operating temperature after the sampling train has been assembled.

7.1.3 Sampling Train Operation. In addition to the procedure given in Method 101, section 7.1.5, maintain a temperature around the filter (if applicable) of  $120^{\circ}\pm 14^{\circ}$  C ( $248^{\circ}\pm 25^{\circ}$  F).

7.2 Sample Recovery. Begin proper cleanup procedure as soon as the probe is removed from the stack at the end of the sampling period. Allow the probe to cool. When it can be safely handled, wipe off any external particulate matter near the tip of the probe nozzle and place a cap over it. Do not cap off the probe tip tightly while the sampling train is cooling because the resultant vacuum would draw liquid out from the impingers.

Before moving the sample train to the cleanup site, remove the probe from the train, wipe off the silicone grease, and cap the open outlet of the probe. Be careful not to lose any condensate that might be present. Wipe off the silicone grease from the impinger. Use either ground-glass stoppers, plastic caps, or serum caps to close these openings.

Transfer the probe, impinger assembly, and (if applicable) filter assembly to a cleanup area that is clean, protected from the wind, and free of Hg contamination. The ambient air in laboratories located in the immediate vicinity of Hg-using facilities is not normally free of Hg contamination.

Inspect the train before and during assembly, and note any abnormal conditions. Treat the sample as follows:

7.2.1 Container No. 1 (Impinger, Probe, and Filter Holder) and, if applicable, No. 1A (HCl rinse).

7.2.1.1 Using a graduated cylinder, measure the liquid in the first three impingers to within 1 ml. Record the volume of liquid present (e.g., see Figure 5-3 of Method 5 in 40 CFR Part 60). This information is required to calculate the moisture content of the effluent gas. (Use only graduated cylinder and glass storage bottles that have been precleaned as in Section 7.1.2.) Place the contents of the first three impingers into a 1000-ml glass sample bottle labeled Container No. 1. See the *Precaution* in Section 6.1.6.

NOTE NO. 1 TO SECTION 7.2.1.1: Due to the potential reaction of  $\text{KMnO}_4$  with acid, there could be pressure buildup in the sample storage bottles. These bottles shall not be filled completely and shall be vented to relieve excess pressure. A No. 70-72 hole drilled in the container cap and Teflon liner has been used successfully).

NOTE NO. 2 TO SECTION 7.2.1.1: If a filter is used in the sampling train, remove the filter from its holder as outlined under "Container No. 3" below.)

7.2.1.2 Taking care that dust on the outside of the probe or other exterior surfaces does not get into the sample, quantitatively recover the Hg (and any condensate) from the probe nozzle, probe fitting, probe liner,

front half of the filter holder (if applicable), and impingers as follows: Rinse these components with a total of 250 to 400 ml of fresh acidified 4 percent  $\text{KMnO}_4$  solution carefully assuring removal of all loose particulate matter from the impingers; add all washings to Container No. 1. See the *Precaution* in Section 6.1.6 and see the *Note No. 1* in Section 7.2.1.1. To remove any residual brown deposits on the glassware following the permanganate rinse, rinse with approximately 100 ml of water carefully assuring removal of all loose particulate matter from the impingers, and add this rinse to Container No. 1. If no visible deposits remain after this water rinse, do not rinse with 8 N HCl. However, if deposits do remain on the glassware after the water rinse, wash the impinger walls and stems with a total of only 25 ml of 8 N HCl as follows; turn and shake the impingers so that the 8 N HCl contacts all inside surfaces (wash the first impinger, then pour the wash from the first impinger into the second impinger, and finally pour the wash from the second into the third). DO NOT PLACE THE HCl WASH INTO THE ACIDIFIED PERMANGANATE SOLUTION. Place the HCl wash into a separate container labeled Container No. 1A as follows: place 150 ml of water in an empty sample container labeled Container No. 1A. Pour the HCl wash carefully, with stirring, into Container No. 1A. Rinse the impinger walls and stem with a total of 50 ml of water, and place this rinse into Container No. 1A.

7.2.1.3 After all washings have been collected in the sample containers, prepare as described above to prevent leakage during shipment to the laboratory. Mark the height of the fluid level to determine whether leakage occurs during transport. Label the containers to identify their contents clearly.

7.2.2. Container No. 2 (Silica Gel). Note the color of the indicating silica gel to determine whether it has been completely spent and make a notation of its condition. Transfer the silica gel from its impinger to its original container and seal. The tester may use as aids a funnel to pour the silica gel and a rubber policeman to remove the silica gel from the impinger. It is not necessary to remove the small amount of particles that may adhere to the impinger wall and are difficult to remove. Since the gain in weight is to be used for moisture calculations, do not use any water or other liquids to transfer the silica gel. If a balance is available in the field, weigh the spent silica gel (or silica gel plus impinger) to the nearest 0.5 g; record this weight.

7.2.3 Container No. 3 (Filter). If a filter was used, carefully remove it from the filter holder, place it into a 100 ml glass sample container, and add 20 to 40 ml of acidified  $\text{KMnO}_4$ . If it is necessary to fold the filter, be sure that the particulate cake is inside the fold. Carefully transfer to the 100 ml sample

bottle any particulate matter and filter fibers that might adhere to the filter holder gasket by using a dry Nylon bristle brush and a sharp edged blade. See the *Precaution* in Section 6.1.6 and see the *Note No. 1* in Section 7.2.1.1. Label the container to clearly identify its contents. Mark the height of the fluid level to determine whether leakage occurs during transport.

7.2.4 Container No. 4 (Filter Blank). If a filter was used, treat an unused filter from the same filter lot used for sampling in the same manner as Container No. 3.

7.2.5 Container No. 5 (Absorbing Solution Blank). For a blank, place 500 ml of acidified absorbing solution in a 1000 ml sample bottle. See the *Precaution* in Section 6.1.6 and see the *Note No. 1* in Section 7.2.1.1.

7.2.6 Container No. 6 (HCl rinse blank). For a blank, place 200 ml of water in a 1000-ml sample bottle, and add 25 ml of 8 N HCl carefully with stirring. Seal the container. Only one blank sample per 3 runs is required.

7.3 Sample preparation. Check liquid level in each container to see if liquid was lost during transport. If a noticeable amount of leakage occurred, either void the sample or use methods subject to the approval of the Administrator to account for the losses. Then follow the procedures below.

7.3.1 Containers No. 3 and No. 4 (Filter and Filter Blank). If a filter is used, place the contents, including the filter, of Containers No. 3 and 4 in separate 250-ml beakers, and heat the beakers on a steam bath until most of the liquid has evaporated. Do not take to dryness. Add 20 ml of concentrated HNO<sub>3</sub> to the beakers, cover them with a watch glass, and heat on a hot plate at 70 °C for 2 hours. Remove from the hot plate. Filter the solution from digestion of the Container No. 3 contents through Whatman No. 40 filter paper, and save the filtrate for addition to the Container No. 1 filtrate as described in Section 7.3.2. Discard the filter. Filter the solution from the digestion of the Container No. 4 contents through Whatman No. 40 filter paper, and save the filtrate for addition to Container No. 5 filtrate as described in Section 7.3.3. Discard the filter.

7.3.2 Container No. 1 (Impingers, Probe, and Filter Holder) and, if applicable, No. 1A (HCl rinse). Filter the contents of Container No. 1 through Whatman 40 filter paper into a 1-liter volumetric flask to remove the brown MnO<sub>2</sub> precipitate. Save the filter for digestion of the brown MnO<sub>2</sub> precipitate. Add the sample filtrate from Container No. 3 to the 1-liter volumetric flask, and dilute to volume with water. If the combined filtrates are greater than 1000 ml, determine the volume to the nearest ml and make the appropriate corrections for blank subtractions. Mix thoroughly. Mark the combined filtrates as ANALYSIS SAMPLE No. A.1. and analyze for Hg within 48 hr of the filtration step (NOTE: Do not confuse ANALYSIS SAMPLE

No. A.1. with the contents of field Sample Container No. 1A which contains the 8 N HCl wash). Place the saved filter, which was used to remove the brown MnO<sub>2</sub> precipitate, into an appropriate sized *vented* container, which will allow release of any gases including chlorine formed when the filter is digested. In a laboratory hood which will remove any gas produced by the digestion of the MnO<sub>2</sub>, add 25 ml of 8 N HCl to the filter and allow to digest for a minimum of 24 hours at room temperature. Filter the contents of Container 1A through Whatman 40 paper into a 500-ml volumetric flask. Then filter the result of the digestion of the brown MnO<sub>2</sub> from Container No. 1 through Whatman 40 filter into the same 500-ml volumetric flask, and dilute and mix well to volume with water. Discard the filter. Mark this combined 500-ml dilute solution as ANALYSIS SAMPLE No. HCL A.2., and analyze for Hg.

7.3.3 Container No. 5 (Absorbing Solution Blank) and No. 6 (HCl Rinse Blank). Prepare the contents of Container No. 5 for analysis by the same procedure used for Container No. 1 as described in Section 7.3.2. Add the filter blank filtrate from Container No. 4 to the 1-liter volumetric flask, and dilute to volume. Mix thoroughly. Mark this as ANALYSIS SAMPLE No. A.1. BLANK, and analyze for Hg within 48 hours of the filtration step. Digest any brown precipitate remaining on the filter from the filtration of Container No. 5 by the same procedure as described in Section 7.3.2. Filter the contents of Container No. 6 by the same procedure as described in Section 7.3.2, and combine in the 500-ml volumetric flask with the filtrate from the digested blank MnO<sub>2</sub> precipitate. Mark this resultant 500-ml combined dilute solution as ANALYSIS SAMPLE No. HCL A.2 blank. (NOTE: When analyzing samples A.1 blank and HCL A.2 blank, always begin with 10-ml aliquots. This applies specifically to blank samples.)

7.4 Analysis. Calibrate the spectrophotometer and recorder and prepare the calibration curve as described in sections 8.1 and 8.2. Then repeat the procedure used to establish the calibration curve with appropriately sized aliquots (1 to 10 ml) of the samples (from sections 7.3.2 and 7.3.3) until two consecutive peak heights agree within ±3 percent of their average value. If the 10-ml sample is below the detectable limit, use a larger aliquot (up to 20 ml), but decrease the volume of water added to the aeration cell accordingly to prevent the solution volume from exceeding the capacity of the aeration bottle. If the peak maximum of a 1.0-ml aliquot is off scale, further dilute the original sample to bring the Hg concentration into the calibration range of the spectrophotometer. If the Hg content of the absorbing solution and filter blank is below the working range of the analytical method, use zero for the blank.

Run a blank and standard at least after every five samples to check the spectrophotometer calibration; recalibrate as necessary.

It is also recommended that at least one sample from each stack test be checked by the Method of Standard Additions to confirm that matrix effects have not interfered in the analysis.

#### 8. Calibration and Standards

The calibration and standards are the same as Method 101, Section 8, except for the following variations:

8.1 Optical Cell Heating System Calibration. Same as Method 101, Section 8.2, except use a 25-ml graduated cylinder to add 25 ml of deionized distilled water to the bottle section of the aeration cell.

8.2 Spectrophotometer and Recorder Calibration. The mercury response may be measured by either peak height or peak area. (NOTE: The temperature of the solution affects the rate at which elemental Hg is released from a solution and, consequently, it affects the shape of the absorption curve (area) and the point of maximum absorbance (peak height). To obtain reproducible results, all solutions must be brought to room temperature before use.) Set the spectrophotometer wave length at 253.7 nm and make certain the optical cell is at the minimum temperature that will prevent water condensation.

Then set the recorder scale as follows: Using a 25-ml graduated cylinder, add 25 ml of deionized distilled water to the aeration cell bottle and pipet 5.0 ml of the working mercury standard solution into the aeration cell. (NOTE: Always add the Hg-containing solution to the aeration cell after the 25 ml of deionized distilled water.) Place a Teflon-

coated stirring bar in the bottle. Add 5 ml of the 4 percent  $\text{KMnO}_4$  absorbing solution followed by 5 ml of 15 percent  $\text{HNO}_3$  and 5 ml of 5 percent  $\text{KMnO}_4$  to the aeration bottle and mix well. Now, attach the bottle section to the bubbler section of the aeration cell and make certain that (1) the aeration cell exit arm stopcock (Figure 101-3 of Method 101) is closed (so that Hg will not prematurely enter the optical cell when the reducing agent is being added) and (2) there is no flow through the bubbler. Add 5 ml of sodium chloride hydroxylamine in 1-ml increments until the solution is colorless. Now add 5 ml of tin (II) solution to the aeration bottle through the side arm, and immediately stopper the side arm. Stir the solution for 15 seconds, turn on the recorder, open the aeration cell exit arm stopcock, and immediately initiate aeration with continued stirring. Determine the maximum absorbance of the standard and set this value to read 90 percent of the recorder full scale.

#### 9. Calculations

9.1 Dry Gas Volume, Volume of Water Vapor and Moisture Content, Stack Gas Velocity, Isokinetic Variation and Acceptable Results, and Determination of Compliance. Same as Method 101, sections 9.1, 9.2, 9.3, 9.6, and 9.7, respectively, except use data obtained from this test.

9.2 Total Mercury. For each source sample, correct the average maximum absorbance of the two consecutive samples whose peak heights agree within 3 percent of their average for the contribution of the blank. Then calculate the total Hg content in  $\mu\text{g}$  in each sample. Correct for any dilutions made to bring the sample into the working range of the spectrophotometer.

$$m_{(\text{HCl})\text{Hg}} = \left[ \frac{C_{(\text{HCl})\text{Hg}} \text{ D.F.}_{(\text{HCl})\text{Hg}}}{S} - \frac{C_{(\text{HCl} \text{ blk})\text{Hg}} \text{ D.F.}_{(\text{HCl} \text{ blk})\text{Hg}}}{S_{\text{blk}}} \right] V_{f(\text{HCl})} (10^{-3}) \quad \text{Eq. 101A-1}$$

where:

$m_{(HCl) Hg}$ =Total blank corrected  $\mu\text{g}$  of Hg in HCl rinse and HCl digestate of filter sample

$C_{(HCl) Hg}$ =Total ng of Hg analyzed in the aliquot from the 500-ml ANALYSIS SAMPLE No. HCl A.2.

$C_{(HCl) \text{ blk} Hg}$ =Total ng of Hg analyzed in aliquot of the 500-ml ANALYSIS SAMPLE No. HCl A.2 blank.

$D.F._{(HCl) Hg}$ =Dilution factor for the HCl-digested Hg-containing solution, ANALYSIS SAMPLE No. "HCl A.2." This dilution factor applies only to the dilution steps, if necessary, of the 500 ml of the original sample volume [ $V_{f(HCl)}$ ] of "HCl A.2" because the original volume has been factored out in the equation along with the sample aliquot (S). In Eq. 101A-1, the sample aliquot, S, is digested according to Sections 7.4, 8.1, and 8.2 and the Hg from this digestion is introduced directly into the aeration cell for analysis. A dilution factor is required only if it is necessary to bring the sample into the analytical instrument's calibration range. If no dilution is necessary, then  $D.F._{(HCl) Hg}$  equals 1.0.

$D.F._{(HCl) \text{ blk} Hg}$ =Dilution factor for the HCl-digested Hg-containing solution, ANALYSIS SAMPLE No. "HCl A.2 blank." (Refer to sample No. "HCl A.2" dilution factor information above.)

$V_{f(HCl)}$ =Solution volume of original sample, 500 ml for the HCl samples diluted as described in Section 7.3.

$10^{-3}$ =Conversion factor  $\mu\text{g}/\text{ng}$ .

S=Aliquot volume of sample: digested according to Sections 7.4, 8.1, 8.2 and the Hg from this digestion is introduced directly into the aeration cell for analysis, ml.

$S_{\text{blk}}$ =Aliquot volume of blank: digested according to Sections 7.4, 8.1, and 8.2 and the Hg from this digestion is introduced directly into the aeration cell for analysis, ml.

9.2.1 The maximum allowable blank subtraction for the Hg in the HCl washes is the lesser of the two following values: (1) the actual blank measured value (ANALYSIS SAMPLE NO. HCl A.2 blank), or (2) 5% of the Hg content in the combined HCl rinse and digested sample (ANALYSIS SAMPLE No. HCl A.2).

$$m_{(ftr)Hg} = \left[ \frac{C_{(ftr)Hg} D.F._{(ftr)Hg} V_{f(ftr)}}{S_{(ftr)}} - \frac{C_{(ftr) \text{ blk} Hg} D.F._{(ftr) \text{ blk} Hg} V_{f(ftr) \text{ blk}}}{S_{(ftr) \text{ blk}}} \right] (10^{-3}) \quad \text{Eq. 101A-2}$$

where:

$m_{(ftr)Hg}$ =Total blank corrected  $\mu\text{g}$  of Hg in  $\text{KMnO}_4$  filtrate and  $\text{HNO}_3$  digestion of filter sample.

$C_{(ftr)Hg}$ =Total ng of Hg in aliquot of  $\text{KMnO}_4$  filtrate and  $\text{HNO}_3$  digestion of filter analyzed (aliquot of ANALYSIS SAMPLE No. A.1).

$C_{(ftr) \text{ blk} Hg}$ =Total ng of Hg analyzed in aliquot of  $\text{KMnO}_4$  blank and  $\text{HNO}_3$  digestion of blank filter (aliquot of ANALYSIS SAMPLE No. A.1 blank).

$V_{f(ftr)}$ =Solution volume of original sample, normally 100 ml for samples diluted as described in Section 7.3.

$V_{f(\text{blk})}$ =Solution volume of blank sample, 1000 ml for samples diluted as described in Section 7.3.

$D.F._{(ftr)Hg}$ =Dilution factors, if necessary for ANALYSIS SAMPLE No. A.1, calculated similarly to those above for the (HCl) Hg samples.

$D.F._{(ftr) \text{ blk} Hg}$ =Dilution factors, if necessary for ANALYSIS SAMPLE No. A.1 blank, calculated similarly to those above for the (HCl) Hg samples.

9.2.2 The maximum allowable blank subtraction for the HCl is the lesser of the two

following values: (1) the actual blank measured value (ANALYSIS SAMPLE No. "A.1 blank"), or (2) 5% of the Hg content in the filtrate (ANALYSIS SAMPLE No. "A.1").

$$m_{Hg} = m_{(HCl)Hg} + m_{(ftr)Hg} \quad \text{Eq. 101A-3}$$

where:

$m_{Hg}$ =Total blank corrected Hg content in each sample,  $\mu\text{g}$ .

$m_{(HCl)Hg}$ =Total blank corrected  $\mu\text{g}$  of Hg in HCl rinse and HCl digestate of filter sample.

$M_{(ftr)Hg}$ =Total blank corrected  $\mu\text{g}$  of Hg in  $\text{KMnO}_4$  filtrate and  $\text{HNO}_3$  digestion of filter sample.

9.3 Mercury Emission Rate. Calculate the Hg emission rate R in g/day for continuous operations using Equation 101A-1. For cyclic operations, use only the time per day each stack is in operation. The total Hg emission rate from a source will be the summation of results from all stacks.

$$R = K \frac{m_{Hg} V_s A_s (86,400 \times 10^{-6})}{[V_{m(\text{std})} + V_{w(\text{std})}] (T_s / P_s)}$$

Eq. 101A-1

Where:

$m_{\text{Hg}}$  = Total Hg content in each sample,  $\mu\text{g}$ .  
 $v_s$  = Average stack gas velocity, m/sec (fps).  
 $A_s$  = Stack cross-sectional area,  $\text{m}^2$  ( $\text{ft}^2$ ).  
 $86,400$  = Conversion factor, sec/day.  
 $10^{-6}$  = Conversion factor,  $\text{g}/\mu\text{g}$ .  
 $V_{\text{m(std)}}$  = Dry gas sample volume at standard conditions, corrected for leakage (if any),  $\text{m}^3$  ( $\text{ft}^3$ ).  
 $V_{\text{w(std)}}$  = Volume of water vapor at standard conditions,  $\text{m}^3$  ( $\text{ft}^3$ ).  
 $T_s$  = Absolute average stack gas temperature,  $^{\circ}\text{K}$  ( $^{\circ}\text{R}$ ).  
 $P_s$  = Absolute stack gas pressure, mm Hg (in. Hg).  
 $K = 0.3858$   $^{\circ}\text{K}/\text{mm Hg}$  for metric units.  
 $= 17.64$   $^{\circ}\text{R}/\text{in. Hg}$  for English units.

## 10. Bibliography

- Same as Method 101, Section 10.
- Mitchell, W. J., M. R. Midgett, J. C. Suggs, and D. Albrinck. Test Methods to Determine the Mercury Emissions from Sludge Incineration Plants. U.S. Environmental Protection Agency. Research Triangle Park, North Carolina. Publication No. EPA-600/4-79-058. September 1979.
- Wilshire, Frank W., J.E. Knoll, T.E. Ward, and M.R. Midgett. Reliability Study of the U.S. EPA's Method 101A—Determination of Particulate and Gaseous Mercury Emissions U.S. Environmental Protection Agency. Research Triangle Park, NC. Report No. 600/D-31/219 AREAL 367, NTIS Acc No. PB91-23361.

METHOD 102—DETERMINATION OF PARTICULATE AND GASEOUS MERCURY EMISSIONS FROM CHLOR-ALKALI PLANTS—HYDROGEN STREAMS

## 1. Introduction

Although similar to Method 101, Method 102 requires changes to accommodate the sample being extracted from a hydrogen stream. Conduct the test according to Method 101, except as shown below:

## 2. Mercury Train Operation

2.1 Probe Heating System. Do not use, unless otherwise specified.

2.2 Glass Fiber Filter. Do not use, unless otherwise specified.

2.3 Safety Procedures. The sampler must conduct the source test under conditions of utmost safety, because hydrogen and air mixtures are explosive. Since the sampling train essentially is leakless, attention to safe operation can be concentrated at the inlet and outlet. If a leak does occur, however, remove the meter box cover to avoid a possible explosive mixture. The following specific precautions are recommended:

2.3.1 Operate only the vacuum pump during the test. The other electrical equipment, e.g., heaters, fans, and timers, normally are

not essential to the success of a hydrogen stream test.

2.3.2 Seal the sample port to minimize leakage of hydrogen from the stack.

2.3.3 Vent sampled hydrogen at least 3 m (10 feet) away from the train. This can be accomplished by attaching a 13-mm-ID (0.50-in.) Tygon tube to the exhaust from the orifice meter. (NOTE: A smaller ID tubing may cause the orifice meter calibration to be erroneous.) Take care to ensure that the exhaust line is not bent or pinched.

## 2.4 Setting of Isokinetic Rates.

2.4.1 If a nomograph is used, take special care in the calculation of the molecular weight of the stack gas and in the setting of the nomograph to maintain isokinetic conditions during sampling (sections 2.4.1.1 through 2.4.1.3 below).

2.4.1.1 Calibrate the meter box orifice. Use the techniques described in APTD-0576 (see Citation 9 in section 10 of Method 101). Calibration of the orifice meter at flow conditions that simulate the conditions at the source is suggested. Calibration should either be done with hydrogen or with some other gas having a similar Reynolds Number so that there is similarity between the Reynolds Numbers during calibration and during sampling.

2.4.1.2 The nomograph described in APTD-0576 cannot be used to calculate the C factor because the nomograph is designed for use when the stack gas dry molecular weight is  $29 \pm 4$ . Instead, the following calculation should be made to determine the proper C factor:

$$C = 0.00154 \Delta H_{\text{H}_2\text{O}} C_p^2 T_m (P_s/P_m) \frac{(1 - B_{\text{ws}})^2}{(1 - B_{\text{ws}}) + 18B_{\text{ws}}/M_d}$$

Where:

$\Delta H_{\text{H}_2\text{O}}$  = Meter box calibration factor obtained in Section 2.4.1.1, in.  $\text{H}_2\text{O}$ .

$C_p$  = Pitot tube calibration coefficient, dimensionless.

$T_m$  = Absolute temperature of gas at the orifice,  $^{\circ}\text{R}$ .

$P_s$  = Absolute pressure of stack gas, in. Hg.

$P_m$  = Absolute pressure of gas at the meter, in. Hg.

$B_{\text{ws}}$  = Fraction by volume of water vapor in the stack gas.

$M_d$  = Dry molecular weight of stack gas, lb/lb-mole.

$0.00154 = (\text{in. H}_2\text{O}) (^{\circ}\text{R})$

NOTE. This calculation is left in English units, and is not converted to metric units because nomographs are based on English units.

2.4.1.3 Set the calculated C factor on the operating nomograph and select the proper nozzle diameter and K factor as specified in APTD-0576. If the C factor obtained in Section 2.4.1.2 exceeds the values specified on the existing operating nomograph, expand

the C scale logarithmically so that the values can be properly located.

2.4.2 If a calculator is used to set isokinetic rates, it is suggested that the isokinetic equation presented in Citation 17 in the Bibliography of Method 101 be used.

2.5 Sampling in Small (<12-in.-Diameter) Stacks. When the stack diameter (or equivalent diameter) is less than 12 inches, conventional pitot tube-probe assemblies should not be used. For sampling guidelines, see Citation 18 in the Bibliography of Method 101.

#### METHOD 103—BERYLLIUM SCREENING METHOD

##### 1. Applicability and Principle

1.1 Applicability. This procedure details guidelines and requirements for methods acceptable for use in determining beryllium (Be) emissions in ducts or stacks at stationary sources.

1.2 Principle. Be emissions are isokinetically sampled from three points in a duct or stack. The collected sample is analyzed for Be using an appropriate technique.

##### 2. Apparatus

2.1 Sampling Train. A schematic of the required sampling train configuration is shown in Figure 103-1. The essential components of the train are the following:

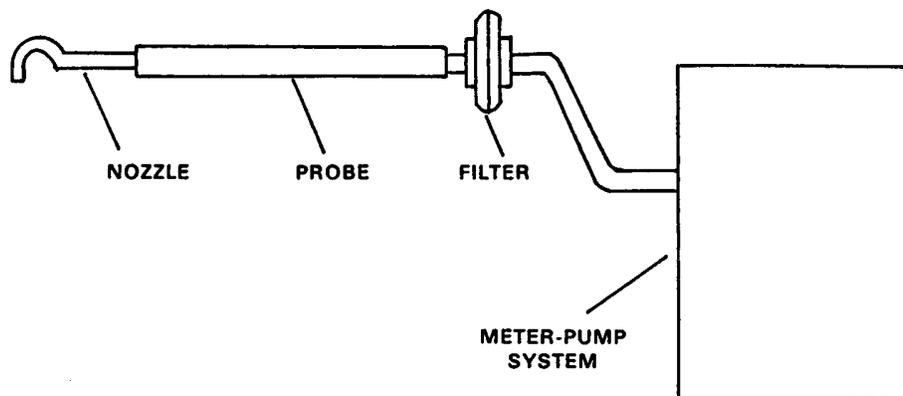


Figure 103-1. Beryllium screening method; sample train schematic.

2.1.1 Nozzle. Stainless steel, or equivalent, with sharp, tapered leading edge.

2.1.2 Probe. Sheathed borosilicate or quartz glass tubing.

2.1.3 Filter. Millipore AA (*Note:* Mention of trade names or specific products does not constitute endorsement by the Environmental Protection Agency), or equivalent, with appropriate filter holder that provides a positive seal against leakage from outside or around the filter. It is suggested that a Whatman 41, or equivalent, be placed immediately against the back side of the Millipore filter as a guard against breakage of the Millipore. Include the backup filter in the analysis. To be equivalent, other filters shall exhibit at least 99.95 percent efficiency (0.05 percent penetration) on 0.3 micron dioctyl phthalate smoke particles, and be amenable to the Be analysis procedure. The filter efficiency tests shall be conducted in accordance with American Society for Testing and Materials (ASTM) Standard Method D 2986-71 (reapproved 1978) (incorporated by reference—see §61.18). Test data from the sup-

plier's quality control program are sufficient for this purpose.

2.1.4 Meter-Pump System. Any system that will maintain isokinetic sampling rate, determine sample volume, and is capable of a sampling rate of greater than 14 lpm (0.5 cfm).

2.2 Measurement of Stack Conditions. The following equipment is used to measure stack conditions:

2.2.1 Pitot Tube. Type S, or equivalent, with a coefficient within 5 percent over the working range.

2.2.2 Inclined Manometer, or Equivalent. To measure velocity head to within 10 percent of the minimum value.

2.2.3 Temperature Measuring Device. To measure stack temperature to within 1.5 percent of the minimum absolute stack temperature.

2.2.4 Pressure Measuring Device. To measure stack pressure to within 2.5 mm Hg (0.1 in. Hg).

2.2.5 Barometer. To measure atmospheric pressure to within 2.5 mm Hg (0.1 in. Hg).

2.2.6 Wet and Dry Bulb Thermometers, Drying Tubes, Condensers, or Equivalent. To determine stack gas moisture content to within 1 percent.

2.3 Sample Recovery.

2.3.1 Probe Cleaning Equipment. Probe brush or cleaning rod at least as long as probe, or equivalent. Clean cotton balls, or equivalent, should be used with the rod.

2.3.2 Leakless Glass Sample Bottles. To contain sample.

2.4 Analysis. Use equipment necessary to perform an atomic absorption, spectrographic, fluorometric, chromatographic, or equivalent analysis.

### 3. Reagents

3.1 Sample Recovery.

3.1.1 Water. Distilled water.

3.1.2 Acetone. Reagent grade.

3.1.3 Wash Acid, 50 Percent (V/V) Hydrochloric Acid (HCl).

Mix equal volumes of concentrated HCl and water, being careful to add the acid slowly to the water.

3.2 Analysis. Reagents as necessary for the selected analytical procedure.

### 4. Procedure

Guidelines for source testing are detailed in the following sections. These guidelines are generally applicable; however, most sample sites differ to some degree and temporary alterations such as stack extensions or expansions often are required to insure the best possible sample site. Further, since Be is hazardous, care should be taken to minimize exposure. Finally, since the total quantity of Be to be collected is quite small, the test must be carefully conducted to prevent contamination or loss of sample.

4.1 Selection of a Sampling Site and Number of Sample Runs. Select a suitable sample site that is as close as practicable to the point of atmospheric emission. If possible, stacks smaller than 1 foot in diameter should not be sampled.

4.1.1 Ideal Sampling Site. The ideal sampling site is at least eight stack or duct diameters downstream and two diameters upstream from any flow disturbance such as a bend, expansion or contraction. For rectangular cross sections, use Equation 103-1 to determine an equivalent diameter,  $D_e$ .

$$D_e = \frac{2LW}{L+W} \quad \text{Eq. 103-1}$$

Where:

L=length

W=width

4.1.2 Alternate Sampling Site. Some sampling situations may render the above sampling site criteria impractical. In such cases,

select an alternate site no less than two diameters downstream and one-half diameter upstream from any point of flow disturbance. Additional sample runs are recommended at any sample site not meeting the criteria of section 4.1.1.

4.1.3 Number of Sample Runs Per Test. Three sample runs constitute a test. Conduct each run at one of three different points. Select three points that proportionately divide the diameter, or are located at 25, 50, and 75 percent of the diameter from the inside wall. For horizontal ducts, sample on a vertical line through the centroid. For rectangular ducts, sample on a line through the centroid and parallel to a side. If additional sample runs are performed per section 4.1.2, proportionately divide the duct to accommodate the total number of runs.

4.2 Measurement of Stack Conditions. Using the equipment described in section 2.2, measure the stack gas pressure, moisture, and temperature to determine the molecular weight of the stack gas. Sound engineering estimates may be made in lieu of direct measurements. Describe the basis for such estimates in the test report.

4.3 Preparation of Sampling Train. Assemble the sampling train as shown in Figure 103-1. It is recommended that all glassware be precleaned by soaking in wash acid for 2 hours.

Leak check the sampling train at the sampling site. The leakage rate should not be in excess of 1 percent of the desired sample rate.

4.4 Beryllium Train Operation. For each run, measure the velocity at the selected sampling point. Determine the isokinetic sampling rate. Record the velocity head and the required sampling rate. Place the nozzle at the sampling point with the tip pointing directly into the gas stream. Immediately start the pump and adjust the flow to isokinetic conditions. At the conclusion of the test, record the sampling rate. Again measure the velocity head at the sampling point. The required isokinetic rate at the end of the period should not have deviated more than 20 percent from that originally calculated. Describe the reason for any deviation beyond 20 percent in the test report.

Sample at a minimum rate of 14 lpm (0.5 cfm). Obtain samples over such a period or periods of time as are necessary to determine the maximum emissions which would occur in a 24-hour period. In the case of cyclic operations, perform sufficient sample runs so as to allow determination or calculation of the emissions that occur over the duration of the cycle. A minimum sampling time of 2 hours per run is recommended.

4.5 Sample Recovery. It is recommended that all glassware be precleaned as in section 4.3. Sample recovery should also be performed in an area free of possible Be contamination. When the sampling train is

moved, exercise care to prevent breakage and contamination. Set aside a portion of the acetone used in the sample recovery as a blank for analysis. The total amount of acetone used should be measured for accurate blank correction. Blanks can be eliminated if prior analysis shows negligible amounts.

Remove the filter (and backup filter, if used) and any loose particulate matter from filter holder, and place in a container.

Clean the probe with acetone and a brush or long rod and cotton balls. Wash into the container with the filter. Wash out the filter holder with acetone, and add to the same container.

4.6 Analysis. Make the necessary preparation of samples and analyze for Be. Any currently acceptable method such as atomic absorption, spectrographic, fluorometric, chromatographic, or equivalent may be used.

#### 5. Calibration and Standards

5.1 Sampling Train. As a procedural check, compare the sampling rate regulation with a dry gas meter, spirometer, rotameter (calibrated for prevailing atmospheric conditions), or equivalent, attached to the nozzle inlet of the complete sampling train.

5.2 Analysis. Perform the analysis standardization as suggested by the manufacturer of the instrument, or the procedures for the analytical method in use.

#### 6. Calculations

Calculate the Be emission rate R in g/day for each stack using Equation 103-2. For cyclic operations, use only the time per day each stack is in operation. The total Be emission rate from a source is the summation of results from all stacks.

$$R = \frac{W_t v_s (\text{avg}) A_s (86,400 \times 10^{-6})}{V_{\text{total}}}$$

Eq. 103-2

Where:

$W_t$  = Total weight of Be collected,  $\mu\text{g}$ .

$v_s (\text{avg})$  = Average stack gas velocity, m/sec (ft/sec).

$A_s (\text{avg})$  = Stack area,  $\text{m}^2 (\text{ft}^2)$ .

86,400 = Conversion factor, sec/day.

$10^{-6}$  = Conversion factor,  $\text{g}/\mu\text{g}$ .

$V_{\text{total}}$  = Total volume of gas sampled,  $\text{m}^3 (\text{ft}^3)$ .

#### 7. Test Report

Prepare a test report that includes as a minimum: A detailed description of the sampling train used, results of the procedural check described in Section 5.1 with all data and calculations made, all pertinent data taken during the test, the basis for any estimates made, isokinetic sampling calculations, and emission results. Include a description of the test site, with a block diagram and brief description of the process, location of the sample points in the stack

cross section, and stack dimensions and distances from any point of disturbance.

[38 FR 8826, Apr. 6, 1973, as amended at 50 FR 46295, Nov. 7, 1985]

#### METHOD 104—DETERMINATION OF BERYLLIUM EMISSIONS FROM STATIONARY SOURCES

##### 1. Applicability and Principle

1.1 Applicability. This method is applicable for the determination of beryllium (Be) emissions in ducts or stacks at stationary sources. Unless otherwise specified, this method is not intended to apply to gas streams other than those emitted directly to the atmosphere without further processing.

1.2 Principle. Be emissions are isokinetically sampled from the source, and the collected sample is digested in an acid solution and analyzed by atomic absorption spectrophotometry.

##### 2. Apparatus

2.1 Sampling Train. The sampling train is identical to the Method 5 train as shown in Figure 5-1 (mention of Method 5 refers to 40 CFR part 60). The sampling train consists of the following components:

2.1.1 Probe Nozzle, Pitot Tube, Differential Pressure Gauge, Metering System, Barometer, and Gas Density Determination Equipment. Same as Method 5, Sections 2.1.1, 2.1.3, 2.1.4, 2.1.8, 2.1.9, and 2.1.10, respectively.

2.1.2 Probe Liner. Borosilicate or quartz glass tubing. The tester may use a heating system capable of maintaining a gas temperature of  $120 \pm 14^\circ\text{C}$  ( $248 \pm 25^\circ\text{F}$ ) at the probe exit during sampling to prevent water condensation. *Note:* Do not use metal probe liners.

2.1.3 Filter Holder. Borosilicate glass, with a glass frit filter support and a silicone rubber gasket. Other materials of construction (e.g., stainless steel, Teflon, Viton) may be used, subject to the approval of the Administrator. (*Note:* Mention of trade names of specific products does not constitute endorsement by the Environmental Protection Agency.) The holder design shall provide a positive seal against leakage from the outside or around the filter. The holder shall be attached immediately at the outlet of the probe. A heating system capable of maintaining the filter at a minimum temperature in the range of the stack temperature may be used to prevent condensation from occurring.

2.1.4 Impingers. Four Greenburg-Smith impingers connected in series with leak-free ground glass fittings or any similar leak-free noncontaminating fittings. For the first, third, and fourth impingers, the tester may use impingers that are modified by replacing the tip with a 13-mm-ID (0.5-in.) glass tube extending to 13 mm (0.5 in.) from the bottom of the flask.

2.2 Sample Recovery. The following items are needed:

2.2.1 Probe Cleaning Rod. At least as long as probe.

2.2.2 Glass Sample Bottles. Leakless, with Teflon-lined caps, 500-ml.

2.2.3 Graduated Cylinder. 250-ml.

2.2.4 Funnel and Rubber Policeman. To aid in transfer of silica gel to container; not necessary if silica gel is weighed in the field.

2.2.5 Funnel. Glass, to aid in sample recovery.

2.2.6 Plastic Jar. Approximately 300-ml.

2.3 Analysis. The following equipment is needed:

2.3.1 Atomic Absorption Spectrophotometer. Perkin-Elmer 303, or equivalent, with nitrous oxide/acetylene burner.

2.3.2 Hot Plate.

2.3.3 Perchloric Acid Fume Hood.

### 3. Reagents

Use ACS reagent-grade chemicals or equivalent, unless otherwise specified.

3.1 Sampling and Recovery. The reagents used in sampling and recovery are as follows:

3.1.1 Filter. Millipore AA, or equivalent. It is suggested that a Whatman 41 filter or equivalent be placed immediately against the back side of the Millipore filter as a guard against breaking the Millipore filter. To be equivalent, other filters shall exhibit at least 99.95 percent efficiency (0.05 percent penetration) on 0.3 micron dioctyl phthalate smoke particles. The filter efficiency tests shall be conducted in accordance with ASTM Standard Method D 2986-71 (reapproved 1978) (incorporated by reference—see §61.18). Test data from the supplier's quality control program are sufficient for this purpose.

3.1.2 Water. Deionized distilled, meeting ASTM Specifications for Type 3 Reagent Water—ASTM Test Method D 1193-77 (incorporated by reference—see §61.18). If high concentrations of organic matter are not expected to be present, the analyst may eliminate the  $\text{KMnO}_4$  test for oxidizable organic matter.

3.1.3 Silica Gel. Indicating type, 6- to 16-mesh. If previously used, dry at  $175^\circ\text{C}$  ( $350^\circ\text{F}$ ) for 2 hours. The tester may use new silica gel as received.

3.1.4 Acetone.

3.1.5 Wash Acid, 50 Percent (V/V) Hydrochloric Acid (HCl).

Mix equal volumes of concentrated HCl and water, being careful to add the acid slowly to the water.

3.2 Sample Preparation and Analysis. The reagents needed are listed below:

3.2.1 Water. Same as Section 3.1.2.

3.2.2. Perchloric Acid ( $\text{HClO}_4$ ). Concentrated (70 percent).

3.2.3 Nitric Acid ( $\text{HNO}_3$ ). Concentrated.

3.2.4 Beryllium Powder. Minimum purity 98 percent.

3.2.5 Sulfuric Acid ( $\text{H}_2\text{SO}_4$ ) Solution, 12 N. Dilute 33 ml of concentrated  $\text{H}_2\text{SO}_4$  to 1 liter with water.

3.2.6 Hydrochloric Acid Solution, 25 Percent HCl (V/V).

3.2.7 Standard Beryllium Solution, 1  $\mu\text{g}$  Be/ml. Dissolve 10 mg of Be in 80 ml of 12 N  $\text{H}_2\text{SO}_4$  solution, and dilute to 1000 ml with water. Dilute a 10-ml aliquot to 100 ml with 25 percent HCl solution to give a concentration of 1  $\mu\text{g}$ /ml. Prepare this dilute stock solution fresh daily. Equivalent strength Be stock solutions may be prepared from Be salts such as  $\text{BeCl}_2$  and  $\text{Be}(\text{NO}_3)_2$  (98 percent minimum purity).

### 4. Procedure

4.1 Sampling. Because of the complexity of this method testers should be trained and experienced with the test procedures to assure reliable results. As Be is hazardous, testers should take precautions to minimize exposure. The amount of Be that is collected is generally small, therefore, it is necessary to exercise particular care to prevent contamination or loss of sample.

4.1.1 Pretest Preparation. Follow the general procedure given in Method 5, section 4.1.1. Omit the directions for filters, except check them visually against light for irregularities and flaws such as pinholes.

4.1.2 Preliminary Determinations. Follow the general procedure given in Method 5, section 4.1.2, except as follows: Select a nozzle size based on the range of velocity heads to assure that it is not necessary to change the nozzle size in order to maintain isokinetic sampling rates below 28 liters/min (1.0 cfm).

Obtain samples over a period or periods of time that accurately determine the maximum emissions that occur in a 24-hour period. In the case of cyclic operations, perform sufficient sample runs for the accurate determination of the emissions that occur over the duration of the cycle. A minimum sample time of 2 hours per run is recommended.

4.1.3 Prior to assembly, clean all glassware (probe, impingers, and connectors) by first soaking in wash acid for 2 hours, followed by rinsing with water. Place 100 ml of water in each of the first two impingers, and leave the third impinger empty. Save a portion of the water for a blank analysis. Place approximately 200 g of preweighed silica gel in the fourth impinger. The tester may use more silica gel, but should be careful to ensure that it is not entrained and carried out from the impinger during sampling. Place the silica gel container in a clean place for later use in the sample recovery. As an alternative, determine and record the weight of the silica gel plus impinger to the nearest 0.5 g.

Install the selected nozzle using a Viton A O-ring when stack temperatures are less than  $260^\circ\text{C}$  ( $500^\circ\text{F}$ ). Use a fiberglass string gasket if

temperatures are higher. See APTD-0576 (Citation 9 in Section 10 of Method 101) for details. Other connecting systems using either 316 stainless steel or Teflon ferrules may be used.

If condensation in the probe or filter is a problem, probe and filter heaters will be required. Adjust the heaters to provide a temperature at or above the stack temperature. However, membrane filters such as the Millipore AA are limited to about 225°F. If the stack gas is in excess of about 200°F, consideration should be given to an alternate procedure such as moving the filter holder downstream of the first impinger to insure that the filter does not exceed its temperature limit. Mark the probe with heat-resistant tape or by some other method to denote the proper distance into the stack or duct for each sampling point. Assemble the train as shown in Figure 5-1 of Method 5, using (if necessary) a very light coat of silicone grease on all ground glass joints. Grease only the outer portion (see APTD-0576) to avoid possibility of contamination by the silicone grease. *Note:* An empty impinger may be inserted between the third impinger and the silica gel to remove excess moisture from the sample stream.

After the sampling train has been assembled, turn on and set the probe, if applicable, at the desired operating temperature. Allow time for the temperatures to stabilize. Place crushed ice around the impingers.

4.1.4. Leak-Check Procedures. Follow the leak-check procedures outlined in Method 5, Sections 4.1.4.1 (Pretest Leak Check), 4.1.4.2 (Leak Checks During Sample Run), and 4.1.4.3 (Post-Test Leak Check).

4.1.5 Beryllium Train Operation. Follow the general procedure given in Method 5, Section 4.1.5. For each run, record the data required on a data sheet such as the one shown in Figure 5-2 of Method 5.

4.1.6 Calculation of Percent Isokinetic. Same as Method 5, Section 4.1.6.

4.2 Sample Recovery. Begin proper clean-up procedure as soon as the probe is removed from the stack at the end of the sampling period.

Allow the probe to cool. When it can be safely handled, wipe off any external particulate matter near the tip of the probe nozzle, and place a cap over it. Do not cap off the probe tip tightly while the sampling train is cooling. Capping would create a vacuum and draw liquid out from the impingers.

Before moving the sampling train to the cleanup site, remove the probe from the train, wipe off the silicone grease, and cap the open outlet of the probe. Be careful not to lose any condensate that might be present. Wipe off the silicone grease from the impinger. Use either ground-glass stoppers, plastic caps, or serum caps to close these openings.

Transfer the probe and impinger assembly to a cleanup area that is clean, protected from the wind, and free of Be contamination.

Inspect the train before and during this assembly, and note any abnormal conditions. Treat the sample as follows:

Disconnect the probe from the impinger train. Remove the filter and any loose particulate matter from the filter holder, and place in a sample bottle. Place the contents (measured to  $\pm 1$  ml) of the first three impingers into another sample bottle. Rinse the probe and all glassware between it and the back half of the third impinger with water and acetone, and add this to the latter sample bottle. Clean the probe with a brush or a long slender rod and cotton balls. Use acetone while cleaning. Add these to the sample bottle. Retain a sample of the water and acetone as a blank. The total amount of water and acetone used should be measured for accurate blank correction. Place the silica gel in the plastic jar. Seal and secure all sample containers for shipment. If an additional test is desired, the glassware can be carefully double rinsed with water and reassembled. However, if the glassware is out of use more than 2 days, repeat the initial acid wash procedure.

#### 4.3 Analysis.

4.3.1 Apparatus Preparation. Before use, clean all glassware according to the procedure of section 4.1.3. Adjust the instrument settings according to the instrument manual, using an absorption wavelength of 234.8 nm.

4.3.2 Sample Preparation. The digestion of Be samples is accomplished in part in concentrated  $\text{HClO}_4$ . *Caution:* The analyst must insure that the sample is heated to light brown fumes after the initial  $\text{HNO}_3$  addition; otherwise, dangerous perchlorates may result from the subsequent  $\text{HClO}_4$  digestion.  $\text{HClO}_4$  should be used only under a hood.

4.3.2.1 Filter Preparation. Transfer the filter and any loose particulate matter from the sample container to a 150-ml beaker. Add 35 ml concentrated  $\text{HNO}_3$ . Heat on a hotplate until light brown fumes are evident to destroy all organic matter. Cool to room temperature, and add 5 ml concentrated  $\text{H}_2\text{SO}_4$  and 5 ml concentrated  $\text{HClO}_4$ . Then proceed with step 4.3.2.4.

4.3.2.2 Water Preparation. Place a portion of the water and acetone sample into a 150-ml beaker, and put on a hotplate. Add portions of the remainder as evaporation proceeds and evaporate to dryness. Cool the residue, and add 35 ml concentrated  $\text{HNO}_3$ . Heat on a hotplate until light brown fumes are evident to destroy any organic matter. Cool to room temperature, and add 5 ml concentrated  $\text{H}_2\text{SO}_4$  and 5 ml concentrated  $\text{HClO}_4$ . Then proceed with step 4.3.2.4.

4.3.2.3 Silica Gel Preparation Analyses. Weigh the spent silica gel, and report to the nearest gram.

4.3.2.4 Final Sample Preparation. Samples from 4.3.2.1 and 4.3.2.2 may be combined here for ease of analysis. Replace on a hotplate, and evaporate to dryness in a HClO<sub>4</sub> hood. Cool and dissolve the residue in 10.0 ml of 25 percent V/V HCl. Samples are now ready for the atomic absorption unit. It is necessary for the Be concentration of the sample to be within the calibration range of the unit. If necessary, perform further dilution of sample with 25 percent V/V HCl to bring the sample within the calibration range.

4.3.3 Beryllium Determination. Analyze the samples prepared in 4.3.2 at 234.8 nm using a nitrous oxide/acetylene flame. Aluminum, silicon and other elements can interfere with this method if present in large quantities. Standard methods are available, however, that may be used to effectively eliminate these interferences (see Citation 2 in Section 8).

#### 5. Calibration

5.1 Sampling Train. Calibrate the sampling train components according to the procedures outlined in the following sections of Method 5: Section 5.1 (Probe Nozzle), section 5.2 (Pitot Tube), section 5.3 (Metering System), section 5.4 (Probe Heater), section 5.5 (Temperature Gauges), section 5.7 (Barometer). Note that the leak check described in section 5.6 of Method 5 applies to this method.

#### 6. Calculations

6.1 Dry Gas Volume. Using the data from each sample run, calculate the dry gas sample volume at standard conditions  $V_{m(std)}$  (corrected for leakage, if necessary) as outlined in Section 6.3 of Method 5.

6.2 Volume of Water Vapor in Sample and Moisture Content of Stack Gas. Using the data obtained from each sample run, calculate the volume of water vapor  $V_{w(std)}$  in the sample, and the moisture content  $B_{ws}$  of the stack gas. Use Equations 5-2 and 5-3 of Method 5.

6.3 Stack Gas Velocity. Using the data from each sample run and Equation 2-9 of Method 2, calculate the average stack gas velocity  $v_{s(avg)}$ .

6.4 Beryllium Emission Rate. Calculate the Be emission rate  $R$  in g/day for each stack using Equation 104-1. For cyclic operations, use only the time per day each stack is in operation. The total Be emission rate from a source will be the summation of results from all stacks.

$$R=K \frac{W_t V_s(avg) A_s (86,400 \times 10^{-6})}{[V_{m(std)} + V_{w(std)}] (T_s/P_s)}$$

Eq. 104-1

Where:

$W_t$ =Total weight of Be collected,  $\mu\text{g}$ .  
 $A_s$ =Stack cross-sectional area,  $\text{m}^2$  ( $\text{ft}^2$ ).

86,400=Conversion factor,  $\text{sec/day}$ .

$10^{-6}$ =Conversion factor,  $\text{g}/\mu\text{g}$ .

$T_s$ =Absolute average stack gas temperature,  $^{\circ}\text{K}$  ( $^{\circ}\text{P}$ ).

$P_s$ =Absolute stack gas pressure, mm Hg (in. Hg).

$K=0.3858$   $^{\circ}\text{K}/\text{mm Hg}$  for metric units.

$=17.64$   $^{\circ}\text{P}/\text{in. Hg}$  for English units.

6.5 Isokinetic Variation and Acceptable Results. Same as Method 5, Sections 6.11 and 6.12, respectively.

#### 7. Determination of Compliance

Each performance test consists of three sample runs of the applicable test method. For the purpose of determining compliance with an applicable national emission standard, use the average of the results of all sample runs.

#### 8. Bibliography

In addition to Citations 1-3 and 5-15 of Section 10 of Method 101, the following citations may be helpful:

1. Amos, M.D., and J. B. Willis. Use of High-Temperature Pre-Mixed Flames in Atomic Absorption Spectroscopy. *Spectrochim. Acta.* 22:1325. 1966.

2. Fleet, B., K. V. Liberty, and T. S. West. A Study of Some Matrix Effects in the Determination of Beryllium by Atomic Absorption Spectroscopy in the Nitrous Oxide-Acetylene Flame. *Talanta* 17:203. 1970.

#### METHOD 105—DETERMINATION OF MERCURY IN WASTEWATER TREATMENT PLANT SEWAGE SLUDGE

##### 1. Applicability and Principle

1.1 Applicability. This method applies to the determination of total organic and inorganic mercury (Hg) content in sewage sludges. The range of this method is 0.2 to 5  $\mu\text{g/g}$ ; it may be extended by increasing or decreasing sample size.

1.2 Principle. Time-composite sludge samples are withdrawn from the conveyor belt after dewatering and before incineration or drying. A weighed portion of the sludge is digested in aqua regia and oxidized by potassium permanganate ( $\text{KMnO}_4$ ). Hg in the digested sample is then measured by the conventional spectrophotometric cold-vapor technique.

##### 2. Apparatus

2.1 Sampling.

2.1.1 Container. Plastic, 50-liter.

2.1.2 Scoop. To remove 950-ml (1-qt.) sludge sample.

2.2 Sludge Sample Preparation.

2.2.1 Mixer. Mortar mixer, wheelbarrow-type, 57-liter (or equivalent) with electricity driven motor.

2.2.2 Blender. Waring-type, 2-liter. (Note: Mention of specific trade names does not constitute endorsement by the Environmental Protection Agency.)

2.2.3 Scoop. To remove 100-ml and 20-ml samples of blended sludge.

2.3 Analysis. Same as Method 101, Sections 5.3 and 5.4, except for the following:

2.3.1 Balance. The balance of Method 101, Section 5.3.17, is not needed.

2.3.2 Filter Paper. S and S No. 588 (or equivalent).

### 3. Reagents

3.1 Water. Same as Method 101A, Section 6.1.1.

3.2 Aqua Regia. Prepare immediately before use. Carefully add one volume of concentrated nitric acid (HNO<sub>3</sub>) to three volumes of concentrated hydrochloric acid (HCl).

3.3 Antifoam B Silicon Emulsion. J.T. Baker Company (or equivalent).

3.4 Mercury (II) Stock Solution, 1 mg Hg/ml. Completely dissolve 135.4 mg of ACS reagent-grade HgCl<sub>2</sub> in 75 ml of water, add 10 ml of concentrated HNO<sub>3</sub>, and adjust the volume to 100.0 ml with water. Mix thoroughly. (This solution is stable for at least 1 month.)

3.5 Intermediate Mercury Standard Solution, 10 µg Hg/ml. Prepare fresh weekly. Pipet 5.0 ml of the Hg stock solution into a 500-ml volumetric flask, and add 20 ml of the 15-percent HNO<sub>3</sub> solution. Adjust the volume to 500 ml with water. Thoroughly mix the solution.

3.6 Working Mercury Standard Solution, 200 ng Hg/ml. Prepare fresh daily. Pipet 5.0 ml of the "Intermediate Mercury Standard Solution" into a 250-ml volumetric flask. Add 20 ml of 15-percent HNO<sub>3</sub>, and adjust the volume to 250 ml with water. Mix thoroughly.

3.7 Tin (II) Solution, Sodium Chloride-Hydroxylamine Solution, 15-Percent Nitric Acid, and Potassium Permanganate Solution. Same as Method 101A, Section 6.2.

### 4. Procedure

4.1 Sludge Sampling. Withdraw equal-volume increments of sludge [for a total of at least 15 liters (16-qt.)] at intervals of 30 min over an 8-hr period, and place in a rigid plastic container.

4.2 Sludge Mixing. Transfer the entire 15-liter sample to a 57-liter capacity (2-ft<sup>3</sup>) mortar mixer. Mix the sample for a minimum of 30 min at 30 rpm. Using a 200-ml beaker, take six 100-ml portions of sludge, and combine in a 2-liter blender. Blend sludge for 5 min; add water as necessary to give a fluid consistency. Immediately after stopping the blender, use a 50-ml beaker to withdraw four 20-ml portions of blended sludge, and place them in separate, tared 125-ml Erlenmeyer flasks. Reweigh each flask to determine the exact amount of sludge added. (Use three of the samples to determine the mercury content in the sludge, and use the fourth to measure the solids content of the blended sludge.)

4.3 Solids Content of Blended Sludge. Dry one of the 20-ml blended samples from Sec-

tion 4.2 in an oven at 105 ° C to constant weight. Cool in a desiccator, and weigh and record the dry weight of the sample.

4.4 Aqua Regia Digestion of Blended Samples. To each of the three remaining 20-ml samples from Section 4.2, add 25 ml of aqua regia, and digest the samples on a hot plate at low heat (do not boil) for 30 min, or until samples are a pale yellow-brown color and are void of the dark brown color characteristic of organic matter. Remove from the hot plate, and allow to cool.

Filter each digested sample separately through an S and S No. 588 filter, or equivalent, and rinse the filter contents with 50 ml of water. Transfer the filtrate and filter washing to a 100-ml volumetric flask, and carefully dilute to volume with water.

4.5 Solids Content of Sludge Before Blending. Using a 200-ml beaker, remove two 100-ml portions of mixed sludge from the mortar mixer, and place in separate, tared 400-ml beakers. Reweigh each beaker to determine the exact amount of sludge added. Dry in an oven at 105 ° C, and cool in a desiccator to constant weight.

4.6 Analysis for Mercury. The same as Method 101A, Sections 7.4 and 8, except for the following variation.

4.6.1 Spectrophotometer and Recorder Calibration. The mercury response may be measured by either peak height or peak area. Note: The temperature of the solution affects the rate at which elemental Hg is released from solution and, consequently, it affects the shape of the absorption curve (area) and the point of maximum absorbance (peak height). Therefore, to obtain reproducible results, bring all solutions to room temperature before use.

Set the spectrophotometer wavelength to 253.7 nm. Make certain the optical cell is at the minimum temperature that will prevent water condensation from occurring. Then set the recorder scale as follows: Using a 25-ml graduated cylinder, add 25 ml of water to the aeration-cell bottle. Add three drops of Antifoam B to the bottle, and then pipet 5.0 ml of the working Hg standard solution into the aeration cell.

NOTE: Always add the Hg containing solution to the aeration cell after the 25 ml of water.

Place a Teflon-coated stirring bar in the bottle. Add 5 ml of 15-percent HNO<sub>3</sub> and 5 ml of 5-percent KMnO<sub>4</sub> to the aeration bottle, and mix well. Next, attach the bottle section to the bubbler section of the aeration cell, and make certain that: (1) the exit arm stopcock of the aeration cell (Figure 105-3) is closed (so that Hg will not prematurely enter the optical cell when the reducing agent is being added), and (2) there is no flow through the bubbler. Add 5 ml of sodium chloride-hydroxylamine solution to the aeration bottle

through the side arm, and mix. If the solution does not become colorless, add additional sodium chloride-hydroxylamine solution in 1-ml increments until the solution is colorless. Now add 5 ml of tin (II) solution to the aeration bottle through the side arm, and immediately stopper the side arm. Stir the solution for 15 sec, turn on the recorder, open the aeration cell exit arm stopcock, and then immediately initiate aeration with continued stirring. Determine the maximum absorbance of the standard, and set this value to read 90 percent of the recorder full scale.

### 5. Calculations

#### 5.1 Nomenclature.

$C_m$ =Concentration of Hg in the digested sample,  $\mu\text{g/g}$ .  
 $F_{sb}$ =Weight fraction of solids in the blended sludge.  
 $F_{sm}$ =Weight fraction of solids in the collected sludge after mixing.  
 $M$ =Hg content of the sewage sludge (on a dry basis),  $\mu\text{g/g}$ .  
 $m$ =Mass of Hg in the aliquot of digested sample analyzed,  $\mu\text{g}$ .  
 $V_a$ =Volume of digested sample analyzed, ml.  
 $V_s$ =Volume of digested sample, ml.  
 $W_f$ =Weight of empty sample flask, g.  
 $W_{fs}$ =Weight of sample flask and sample, g.  
 $W_{fd}$ =Weight of sample flask and sample after drying, g.  
 $W_b$ =Weight of empty sample beaker, g.  
 $W_{bs}$ =Weight of sample beaker and sample, g.  
 $W_{bd}$ =Weight of sample beaker and sample after drying, g.

5.2 Mercury Content of Digested Sample (Wet Basis). For each sample, correct the average maximum absorbance of the two consecutive samples whose peak heights agree within  $\pm 3$  percent of their average for the contribution of the blank. Use the calibration curve and these corrected averages to determine the final Hg concentration in the solution cell for each sludge sample.

Calculate the total Hg content in each gram of digested sample correcting for any dilutions made to bring the sample into the working range of the spectrophotometer and for the weight of the sludge portion digested.

$$C_m = \frac{mV_s}{V_a(W_{fs} - W_f)} \quad \text{Eq. 105-1}$$

5.3 Solids Content of Blended Sludge. Determine the solids content of the 20-ml aliquot dried in the oven at 105 °C (Section 4.3).

$$F_{sb} = 1 - \frac{W_{fs} - W_{fd}}{W_{fs} - W_f} \quad \text{Eq. 105-2}$$

5.4 Solids Content of Bulk Sample (before blending but, after mixing in mortar mixer).

Determine the solids content of each 100-ml aliquot (Section 4.5), and average the results.

$$F_{sm} = 1 - \frac{W_{bs} - W_{bd}}{W_{bs} - W_b} \quad \text{Eq. 105-3}$$

5.5 Mercury Content of Bulk Sample (Dry Basis). Average the results from the three samples from each 8-hr composite sample, and calculate the Hg concentration of the composite sample on a dry basis.

$$M = \frac{C_{m(\text{avg})}}{F_{sb}} \quad \text{Eq. 105-4}$$

### 6. Bibliography

1. Bishop, J.N. Mercury in Sediments, Ontario Water Resources Commission. Toronto, Ontario, Canada. 1971.
2. Salma, M. Private Communication. EPA California/Nevada Basin Office. Alameda, California.
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#### METHOD 106—DETERMINATION OF VINYL CHLORIDE FROM STATIONARY SOURCES

##### Introduction

Performance of this method should not be attempted by persons unfamiliar with the operation of a gas chromatograph (GC) nor by those who are unfamiliar with source sampling, because knowledge beyond the scope of this presentation is required. Care must be exercised to prevent exposure of

sampling personnel to vinyl chloride, a carcinogen.

#### 1. *Applicability and Principle*

1.1 *Applicability.* The method is applicable to the measurement of vinyl chloride in stack gases from ethylene dichloride, vinyl chloride, and polyvinyl chloride manufacturing processes. The method does not measure vinyl chloride contained in particulate matter.

1.2 *Principle.* An integrated bag sample of stack gas containing vinyl chloride (chloroethene) is subjected to GC analysis using a flame ionization detector (FID).

#### 2. *Range and Sensitivity*

This method is designed for the 0.1 to 50 ppm range. However, common GC instruments are capable of detecting 0.02 ppm vinyl chloride. With proper calibration, the upper limit may be extended as needed.

#### 3. *Interferences*

The chromatographic columns and the corresponding operating parameters herein described normally provide an adequate resolution of vinyl chloride; however, resolution interferences may be encountered on some sources. Therefore, the chromatograph operator shall select the column and operating parameters best suited to his particular analysis requirements, subject to the approval of the Administrator. Approval is automatic, provided that the tester produces confirming data through an adequate supplemental analytical technique, such as analysis with a different column or GC/mass spectroscopy, and has the data available for review by the Administrator.

#### 4. *Apparatus*

4.1 *Sampling* (see Figure 106-1). The sampling train consists of the following components:

4.1.1 *Probe.* Stainless steel, Pyrex glass, or Teflon tubing (as stack temperature permits) equipped with a glass wool plug to remove particulate matter.

4.1.2 *Sample Lines.* Teflon, 6.4-mm outside diameter, of sufficient length to connect probe to bag. Use a new unused piece for each series of bag samples that constitutes an emission test, and discard upon completion of the test.

4.1.3 *Quick Connects.* Stainless steel, male (2) and female (2), with ball checks (one pair without), located as shown in Figure 106-1.

4.1.4 *Tedlar Bags.* 50- to 100-liter capacity, to contain sample. Aluminized Mylar bags may be used if the samples are analyzed within 24 hours of collection.

4.1.5 *Bag Containers.* Rigid leak-proof containers for sample bags, with covering to protect contents from sunlight.

4.1.6 *Needle Valve.* To adjust sample flow rates.

4.1.7 *Pump.* Leak-free, with minimum of 2-liter/min capacity.

4.1.8 *Charcoal Tube.* To prevent admission of vinyl chloride and other organics to the atmosphere in the vicinity of samplers.

4.1.9 *Flowmeter.* For observing sampling flow rate; capable of measuring a flow range from 0.10 to 1.00 liter/min.

4.1.10 *Connecting Tubing.* Teflon, 6.4-mm outside diameter, to assemble sampling train (Figure 106-1).

4.1.11 *Tubing Fittings and Connectors.* Teflon or stainless steel, to assemble sampling train.

4.2 *Sample Recovery.* Teflon tubing, 6.4-mm outside diameter, to connect bag to GC sample loop for sample recovery. Use a new unused piece for each series of bag samples that constitutes an emission test, and discard upon conclusion of analysis of those bags.

4.3 *Analysis.* The following equipment is required:

4.3.1 *Gas Chromatograph.* With FID, potentiometric strip chart recorder and 1.0- to 5.0-ml heated sampling loop in automatic sample valve. The chromatographic system shall be capable of producing a response to 0.1-ppm vinyl chloride that is at least as great as the average noise level. (Response is measured from the average value of the base line to the maximum of the wave form, while standard operating conditions are in use.)

4.3.2 *Chromatographic Columns.* Columns as listed below. The analyst may use other columns provided that the precision and accuracy of the analysis of vinyl chloride standards are not impaired and he has available for review information confirming that there is adequate resolution of the vinyl chloride peak. (Adequate resolution is defined as an area overlap of not more than 10 percent of the vinyl chloride peak by an interferent peak. Calculation of area overlap is explained in Appendix C, Procedure 1: "Determination of Adequate Chromatographic Peak Resolution.")

4.3.2.1 *Column A.* Stainless steel, 2.0 m by 3.2 mm, containing 80/100-mesh Chromasorb 102.

4.3.2.2 *Column B.* Stainless steel, 2.0 m by 3.2 mm, containing 20 percent GE SF-96 on 60/80-mesh Chromasorb P AW; or stainless steel, 1.0 m by 3.2 mm containing 80/100-mesh Porapak T. Column B is required as a secondary column if acetaldehyde is present. If used, column B is placed after column A. The combined columns should be operated at 120° C.

4.3.3 *Flowmeters* (2). Rotameter type, 100-ml/min capacity, with flow control valves.

4.3.4 *Gas Regulators.* For required gas cylinders.

4.3.5 *Thermometer.* Accurate to 1° C, to measure temperature of heated sample loop at time of sample injection.

4.3.6 Barometer. Accurate to 5 mm Hg, to measure atmospheric pressure around GC during sample analysis.

4.3.7 Pump. Leak-free, with minimum of 100-ml/min capacity.

4.3.8 Recorder. Strip chart type, optionally equipped with either disc or electronic integrator.

4.3.9 Planimeter. Optional, in place of disc or electronic integrator on recorder, to measure chromatograph peak areas.

4.4 Calibration. Sections 4.4.2 through 4.4.4 are for the optional procedure in Section 7.1.

4.4.1 Tubing. Teflon, 6.4-mm outside diameter, separate pieces marked for each calibration concentration.

4.4.2 Tedlar Bags. Sixteen-inch-square size, with valve; separate bag marked for each calibration concentration.

4.4.3 Syringes. 0.5-ml and 50- $\mu$ l, gas tight, individually calibrated to dispense gaseous vinyl chloride.

4.4.4 Dry Gas Meter, with Temperature and Pressure Gauges. Singer Model DTM-115 with 802 index, or equivalent, to meter nitrogen in preparation of standard gas mixtures, calibrated at the flow rate used to prepare standards.

#### 5. Reagents

Use only reagents that are of chromatograph grade.

5.1 Analysis. The following are required for analysis.

5.1.1 Helium or Nitrogen. Zero grade, for chromatographic carrier gas.

5.1.2 Hydrogen. Zero grade.

5.1.3 Oxygen or Air. Zero grade, as required by the detector.

5.2 Calibration. Use one of the following options: either 5.2.1 and 5.2.2, or 5.2.3.

5.2.1 Vinyl Chloride. Pure vinyl chloride gas certified by the manufacturer to contain a minimum of 99.9 percent vinyl chloride, for use in the preparation of standard gas mixtures in Section 7.1. If the gas manufacturer maintains a bulk cylinder supply of 99.9+ percent vinyl chloride, the certification analysis may have been performed on this supply rather than on each gas cylinder prepared from this bulk supply. The date of gas cylinder preparation and the certified analysis must have been affixed to the cylinder before shipment from the gas manufacturer to the buyer.

5.2.2 Nitrogen. Zero grade, for preparation of standard gas mixtures as described in Section 7.1.

5.2.3 Cylinder Standards (3). Gas mixture standards (50-, 10-, and 5-ppm vinyl chloride in nitrogen cylinders). The tester may use cylinder standards to directly prepare a chromatograph calibration curve as described in Section 7.2.2, if the following conditions are met: (a) The manufacturer certifies the gas composition with an accuracy

of  $\pm 3$  percent or better (see Section 5.2.3.1). (b) The manufacturer recommends a maximum shelf life over which the gas concentration does not change by greater than  $\pm 5$  percent from the certified value. (c) The manufacturer affixes the date of gas cylinder preparation, certified vinyl chloride concentration, and recommended maximum shelf life to the cylinder before shipment to the buyer.

5.2.3.1 Cylinder Standards Certification. The manufacturer shall certify the concentration of vinyl chloride in nitrogen in each cylinder by (a) directly analyzing each cylinder and (b) calibrating his analytical procedure on the day of cylinder analysis. To calibrate his analytical procedure, the manufacturer shall use, as a minimum, a three-point calibration curve. It is recommended that the manufacturer maintain (1) a high-concentration calibration standard (between 50 and 100 ppm) to prepare his calibration curve by an appropriate dilution technique and (2) a low-concentration calibration standard (between 5 and 10 ppm) to verify the dilution technique used. If the difference between the apparent concentration read from the calibration curve and the true concentration assigned to the low-concentration calibration standard exceeds 5 percent of the true concentration, the manufacturer shall determine the source of error and correct it, then repeat the three-point calibration.

5.2.3.2 Verification of Manufacturer's Calibration Standards. Before using a standard, the manufacturer shall verify each calibration standard (a) by comparing it to gas mixtures prepared (with 99 mole percent vinyl chloride) in accordance with the procedure described in Section 7.1 or (b) calibrating it against vinyl chloride cylinder Standard Reference Materials (SRM's) prepared by the National Bureau of Standards, if such SRM's are available. The agreement between the initially determined concentration value and the verification concentration value must be within  $\pm 5$  percent. The manufacturer must reverify all calibration standards on a time interval consistent with the shelf life of the cylinder standards sold.

5.2.4 Audit Cylinder Standards (2). Gas mixture standards with concentrations known only to the person supervising the analysis of samples. The audit cylinder standards shall be identically prepared as those in Section 5.2.3 (vinyl chloride in nitrogen cylinders). The concentrations of the audit cylinder should be: one low-concentration cylinder in the range of 5 to 20 ppm vinyl chloride and one high-concentration cylinder in the range of 20 to 50 ppm. When available, the tester may obtain audit cylinders by contacting: Environmental Protection Agency, Environmental Monitoring Systems Laboratory, Quality Assurance Division (MD-77), Research Triangle Park, North Carolina 27711. Audit cylinders obtained from a commercial gas manufacturer may be used

provided: (a) the gas manufacturer certifies the audit cylinder as described in Section 5.2.3.1, and (b) the gas manufacturer obtains an independent analysis of the audit cylinders to verify this analysis. Independent analysis is defined here to mean analysis performed by an individual different than the individual who performs the gas manufacturer's analysis, while using calibration standards and analysis equipment different from those used for the gas manufacturer's analysis. Verification is complete and acceptable when the independent analysis concentration is within  $\pm 5$  percent of the gas manufacturer's concentration.

#### 6. Procedure

6.1 Sampling. Assemble the sample train as shown in Figure 106-1. A bag leak check should have been performed previously according to Section 7.3.2. Join the quick connects as illustrated, and determine that all connection between the bag and the probe are tight. Place the end of the probe at the centroid of the stack and start the pump with the needle valve adjusted to yield a flow that will fill over 50 percent of bag volume in the specific sample period. After allowing sufficient time to purge the line several times, change the vacuum line from the container to the bag and evacuate the bag until the rotameter indicates no flow. Then reposition the sample and vacuum lines and begin the actual sampling, keeping the rate proportional to the stack velocity. At all times, direct the gas exiting the rotameter away from sampling personnel. At the end of the sample period, shut off the pump, disconnect the sample line from the bag, and disconnect the vacuum line from the bag container. Protect the bag container from sunlight.

6.2 Sample Storage. Keep the sample bags out of direct sunlight. When at all possible, analysis is to be performed within 24 hours, but in no case in excess of 72 hours of sample collection. Aluminized Mylar bag samples must be analyzed within 24 hours.

6.3 Sample Recovery. With a new piece of Teflon tubing identified for that bag, connect a bag inlet valve to the gas chromatograph sample valve. Switch the valve to receive gas from the bag through the sample loop. Arrange the equipment so the sample gas passes from the sample valve to 100-ml/min rotameter with flow control valve followed by a charcoal tube and a 1-in. H<sub>2</sub>O pressure gauge. The tester may maintain the sample flow either by a vacuum pump or container pressurization if the collection bag remains in the rigid container. After sample loop purging is ceased, allow the pressure gauge to return to zero before activating the gas sampling valve.

6.4 Analysis. Set the column temperature to 100° C and the detector temperature to 150° C. When optimum hydrogen and oxygen flow rates have been determined, verify and

maintain these flow rates during all chromatography operations. Using zero helium or nitrogen as the carrier gas, establish a flow rate in the range consistent with the manufacturer's requirements for satisfactory detector operation. A flow rate of approximately 40 ml/min should produce adequate separations. Observe the base line periodically and determine that the noise level has stabilized and that base line drift has ceased. Purge the sample loop for 30 seconds at the rate of 100 ml/min, shut off flow, allow the sample loop pressure to reach atmospheric pressure as indicated by the H<sub>2</sub>O manometer, then activate the sample valve. Record the injection time (the position of the pen on the chart at the time of sample injection), sample number, sample loop temperature, column temperature, carrier gas flow rate, chart speed, and attenuator setting. Record the barometric pressure. From the chart, note the peak having the retention time corresponding to vinyl chloride as determined in Section 7.2.1. Measure the vinyl chloride peak area,  $A_m$ , by use of a disc integrator, electronic integrator, or a planimeter. Measure and record the peak heights,  $H_m$ . Record  $A_m$  and retention time. Repeat the injection at least two times or until two consecutive values for the total area of the vinyl chloride peak do not vary more than 5 percent. Use the average value for these two total areas to compute the bag concentration.

Compare the ratio of  $H_m$  to  $A_m$  for the vinyl chloride sample with the same ratio for the standard peak that is closest in height. If these ratios differ by more than 10 percent, the vinyl chloride peak may not be pure (possibly acetaldehyde is present) and the secondary column should be employed (see Section 4.3.2.2).

6.5 Determination of Bag Water Vapor Content. Measure the ambient temperature and barometric pressure near the bag. From a water saturation vapor pressure table, determine and record the water vapor content of the bag as a decimal figure. (Assume the relative humidity to be 100 percent unless a lesser value is known.)

#### 7. Preparation of Standard Gas Mixtures, Calibration, and Quality Assurance

7.1 Preparation of Vinyl Chloride Standard Gas Mixtures. (Optional Procedure—delete if cylinder standards are used.) Evacuate a 16-inch square Tedlar bag that has passed a leak check (described in Section 7.3.2) and meter in 5.0 liters of nitrogen. While the bag is filling, use the 0.5-ml syringe to inject 250  $\mu$ l of 99.9+ percent vinyl chloride gas through the wall of the bag. Upon withdrawing the syringe, immediately cover the resulting hole with a piece of adhesive tape. The bag now contains a vinyl chloride concentration of 50 ppm. In a like manner use the 50  $\mu$ l syringe to prepare gas mixtures having 10- and 5-ppm vinyl chloride concentrations. Place

each bag on a smooth surface and alternately depress opposite sides of the bag 50 times to further mix the gases. These gas mixture standards may be used for 10 days from the date of preparation, after which time new gas mixtures must be prepared. (Caution: Contamination may be a problem when a bag is reused if the new gas mixture standard is a lower concentration than the previous gas mixture standard.)

#### 7.2 Calibration.

7.2.1 Determination of Vinyl Chloride Retention Time. (This section can be performed simultaneously with Section 7.2.2.) Establish chromatograph conditions identical with those in Section 6.4 above. Determine proper attenuator position. Flush the sampling loop with zero helium or nitrogen and activate the sample valve. Record the injection time, sample loop temperature, column temperature, carrier gas flow rate, chart speed, and attenuator setting. Record peaks and detector responses that occur in the absence of vinyl chloride. Maintain conditions with the equipment plumbing arranged identically to Section 6.3, and flush the sample loop for 30 seconds at the rate of 100 ml/min with one of the vinyl chloride calibration mixtures. Then activate the sample valve. Record the injection time. Select the peak that corresponds to vinyl chloride. Measure the distance on the chart from the injection time to the time at which the peak maximum occurs. This quantity divided by the chart speed is defined as the retention time. Since other organics may be present in the sample, positive identification of the vinyl chloride peak must be made.

7.2.2 Preparation of Chromatograph Calibration Curve. Make a GC measurement of each gas mixture standard (described in Section 5.2.3 or 7.1) using conditions identical with those listed in Sections 6.3 and 6.4. Flush the sampling loop for 30 seconds at the rate of 100 ml/min with one of the standard mixtures, and activate the sample valve. Record the concentration of vinyl chloride injected ( $C_c$ ), attenuator setting, chart speed, peak area, sample loop temperature, column temperature, carrier gas flow rate, and retention time. Record the barometric pressure. Calculate  $A_c$ , the peak area multiplied by the attenuator setting. Repeat until two consecutive injection areas are within 5 percent, then plot the average of those two values versus  $C_c$ . When the other standard gas mixtures have been similarly analyzed and plotted, draw a straight line through the points derived by the least squares method. Perform calibration daily, or before and after the analysis of each emission test set of bag samples, whichever is more frequent. For each group of sample analyses, use the average of the two calibration curves which bracket that group to determine the respective sample concentrations. If the two calibration curves differ by more than 5 percent

from their mean value, then report the final results by both calibration curves.

#### 7.3 Quality Assurance.

7.3.1 Analysis Audit. Immediately after the preparation of the calibration curve and prior to the sample analyses, perform the analysis audit described in Appendix C, Procedure 2: "Procedure for Field Auditing GC Analysis."

7.3.2 Bag Leak Checks. Checking of bags for leaks is required after bag use and strongly recommended before bag use. After each use, connect a water manometer and pressurize the bag to 5 to 10 cm H<sub>2</sub>O (2 to 4 in. H<sub>2</sub>O). Allow to stand for 10 min. Any displacement in the water manometer indicates a leak. Also, check the rigid container for leaks in this manner. (Note: An alternative leak check method is to pressurize the bag to 5 to 10 cm H<sub>2</sub>O and allow it to stand overnight. A deflated bag indicates a leak.) For each sample bag in its rigid container, place a rotameter in line between the bag and the pump inlet. Evacuate the bag. Failure of the rotameter to register zero flow when the bag appears to be empty indicates a leak.

#### 8. Calculations

8.1 Sample Peak Area. Determine the sample peak area,  $A_c$ , as follows:

$$A_c = A_m A_f \quad \text{Eq. 106-1}$$

Where:

$A_m$ =Measured peak area.

$A_f$ =Attenuation factor.

8.2 Vinyl Chloride Concentrations. From the calibration curves described in Section 7.2.2, determine the average concentration value of vinyl chloride,  $C_c$ , that corresponds to  $A_c$ , the sample peak area. Calculate the concentration of vinyl chloride in the bag,  $C_b$ , as follows:

$$C_b = \frac{C_c P_r T_i}{P_i T_r (1 - B_{wb})} \quad \text{Eq. 106-2}$$

Where:

$C_b$ =Concentration of vinyl chloride in the bag, ppm.

$C_c$ =Concentration of vinyl chloride in the standard sample, ppm.

$P_r$ =Reference pressure, the laboratory pressure recorded during calibration, mm Hg.

$T_i$ =Sample loop temperature on the absolute scale at the time of analysis, °K.

$P_i$ =Laboratory pressure at time of analysis, mm Hg.

$T_r$ =Reference temperature, the sample loop temperature recorded during calibration, °K.

$B_{wb}$ =Water vapor content of the bag sample, as analyzed, volume fraction.

#### 9. Bibliography

## Environmental Protection Agency

## Pt. 61, App. B, Meth. 106

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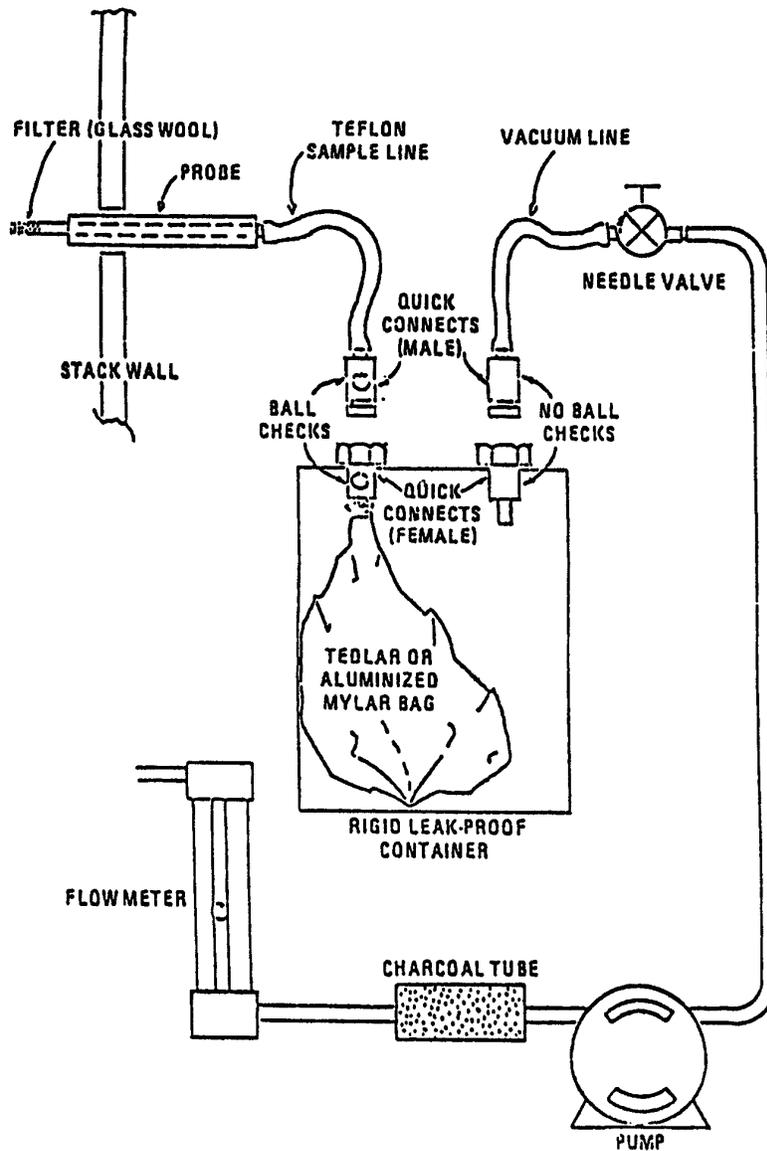


Figure 106-1. Integrated-bag sampling train. (Mention of trade names or specific products does not constitute endorsement by the Environmental Protection Agency.)

METHOD 107—DETERMINATION OF VINYL CHLORIDE CONTENT OF INPROCESS WASTEWATER SAMPLES, AND VINYL CHLORIDE CONTENT OF POLYVINYL CHLORIDE RESIN, SLURRY, WET CAKE, AND LATEX SAMPLES

#### Introduction

Performance of this method should not be attempted by persons unfamiliar with the operation of a gas chromatograph (GC), nor by those who are unfamiliar with source sampling, because knowledge beyond the scope of this presentation is required. Care must be exercised to prevent exposure of sampling personnel to vinyl chloride, a carcinogen.

#### 1. Applicability and Principle

1.1 Applicability. This method applies to the measurement of the vinyl chloride monomer (VCM) content of inprocess wastewater samples, and the residual vinyl chloride monomer (RVCM) content of polyvinyl chloride (PVC) resins, wet cake, slurry, and latex samples. It cannot be used for polymer in fused forms, such as sheet or cubes. This method is not acceptable where methods from Section 304(h) of the Clean Water Act, 33 U.S.C. 1251 et seq. (the Federal Water Pollution Control Amendments of 1972 as amended by the Clean Water Act of 1977) are required.

1.2 Principle. The basis for this method relates to the vapor equilibrium that is established at a constant known temperature in a closed system between RVCM, PVC resin, water, and air. The RVCM in a PVC resin will equilibrate rapidly in a closed vessel, provided that the temperature of the PVC resin is maintained above the glass transition temperature of that specific resin.

#### 2. Range and Sensitivity

The lower limit of detection of vinyl chloride will vary according to the sampling and chromatographic system. The system should be capable of producing a measurement for a 50-ppm vinyl chloride standard that is at least 10 times the standard deviation of the system background noise level.

#### 3. Interferences

The chromatograph columns and the corresponding operating parameters herein described normally provide an adequate resolution of vinyl chloride; however, resolution interferences may be encountered on some sources. Therefore, the chromatograph operator shall select the column and operating parameters best suited to his particular analysis requirements, subject to the approval of the Administrator. Approval is automatic provided that the tester produces confirming data through an adequate supplemental analytical technique, such as analysis with a different column or GC/mass spectroscopy, and has the data available for review by the Administrator.

#### 4. Precision and Reproducibility

An interlaboratory comparison between seven laboratories of three resin samples, each split into three parts, yielded a standard deviation of 2.63 percent for a sample with a mean of 2.09 ppm, 4.16 percent for a sample with a mean of 1.66 ppm, and 5.29 percent for a sample with a mean of 62.66 ppm.

#### 5. Safety

Do not release vinyl chloride to the laboratory atmosphere during preparation of standards. Venting or purging with VCM/air mixtures must be held to a minimum. When they are required, the vapor must be routed to outside air. Vinyl chloride, even at low ppm levels, must never be vented inside the laboratory. After vials have been analyzed, the gas must be vented prior to removal of the vial from the instrument turntable. Vials must be vented through a hypodermic needle connected to an activated charcoal tube to prevent release of vinyl chloride into the laboratory atmosphere. The charcoal must be replaced prior to vinyl chloride breakthrough.

#### 6. Apparatus

6.1 Sampling. The following equipment is required:

6.1.1 Glass bottles. 60-ml (2-oz) capacity, with wax-lined screw-on tops, for PVC samples.

6.1.2 Glass Vials. Headspace vials, with Teflon-faced butyl rubber sealing discs, for water samples.

6.1.3 Adhesive Tape. To prevent loosening of bottle tops.

6.2 Sample Recovery. The following equipment is required:

6.2.1 Glass Vials. Headspace vials, with butyl rubber septa and aluminum caps. Silicone rubber is not acceptable.

6.2.2 Analytical Balance. Capable of determining sample weight within an accuracy of  $\pm 1$  percent.

6.2.3 Vial Sealer. To seal headspace vials.

6.2.4 Syringe. 100- $\mu$ l capacity.

6.3 Analysis. The following equipment is required:

6.3.1 Headspace Sampler and Chromatograph. Capable of sampling and analyzing a constant amount of headspace gas from a sealed vial, while maintaining that vial at a temperature of  $90^{\circ}\text{C} \pm 0.5^{\circ}\text{C}$ . The chromatograph shall be equipped with a flame ionization detector. Perkin-Elmer Corporation Models F-40, F-42, F-45, HS-6, and HS-100, and Hewlett-Packard Corporation Model 19395A have been found satisfactory. Chromatograph backflush capability may be required.

6.3.2 Chromatographic Columns. Stainless steel 1 m by 3.2 mm and 2 m by 3.2 mm, both containing 50/80-mesh Porapak Q. The analyst may use other columns provided that the precision and accuracy of the analysis of vinyl chloride standards are not impaired and he has available for review information

confirming that there is adequate resolution of the vinyl chloride peak. (Adequate resolution is defined as an area overlap of not more than 10 percent of the vinyl chloride peak by an interferent peak. Calculation of area overlap is explained in Appendix C, Procedure 1: "Determination of Adequate Chromatographic Peak Resolution.") Two 1.83 m columns, each containing 1 percent Carbowax 1500 on Carbowax B, have been suggested for samples containing acetaldehyde.

6.3.3 Thermometer. 0 to 100°C, accurate to  $\pm 0.1^\circ\text{C}$ .

6.3.4 Integrator-Recorder. To record chromatograms.

6.3.5 Barometer. Accurate to  $\pm 1$  mm Hg.

6.3.6 Regulators. For required gas cylinders.

6.3.7 Headspace Vial Pre-Pressurizer. Nitrogen pressurized hypodermic needle inside protective shield. (Blueprint available from Test Support Section, Emission Measurement Branch, Office of Air Quality Planning and Standards, Environmental Protection Agency, Mail Drop 19, Research Triangle Park, N.C. 27711.)

#### 7. Reagents

Use only reagents that are of chromatographic grade.

7.1 Analysis. The following items are required for analysis:

7.1.1 Hydrogen. Zero grade.

7.1.2 Nitrogen or Helium. Zero grade.

7.1.3 Air. Zero grade.

7.1.4 Water. Interference free.

7.2 Calibration. The following items are required for calibration:

7.2.1 Cylinder Standards (4). Gas mixture standards (50-, 500-, 2000- and 4000-ppm vinyl chloride in nitrogen cylinders). The tester may use cylinder standards to directly prepare a chromatograph calibration curve as described in Section 9.2, if the following conditions are met: (a) The manufacturer certifies the gas composition with an accuracy of  $\pm 3$  percent or better (see Section 7.2.1.1). (b) The manufacturer recommends a maximum shelf life over which the gas concentration does not change by greater than  $\pm 5$  percent from the certified value. (c) The manufacturer affixes the date of gas cylinder preparation, certified vinyl chloride concentration, and recommended maximum shelf life to the cylinder before shipment to the buyer.

7.2.1.1 Cylinder Standards Certification. The manufacturer shall certify the concentration of vinyl chloride in nitrogen in each cylinder by (a) directly analyzing each cylinder and (b) calibrating his analytical procedure on the day of cylinder analysis. To calibrate his analytical procedure, the manufacturer shall use, as a minimum, a 3-point calibration curve. It is recommended that the manufacturer maintain (1) a high-concentration calibration standard (between

4000 and 8000 ppm) to prepare his calibration curve by an appropriate dilution technique and (2) a low-concentration calibration standard (between 50 and 500 ppm) to verify the dilution technique used. If the difference between the apparent concentration read from the calibration curve and the true concentration assigned to the low-concentration calibration standard exceeds 5 percent of the true concentration, the manufacturer shall determine the source of error and correct it, then repeat the 3-point calibration.

7.2.1.2 Verification of Manufacturer's Calibration Standards. Before using, the manufacturer shall verify each calibration standard by (a) comparing it to gas mixtures prepared (with 99 mole percent vinyl chloride) in accordance with the procedure described in Section 7.1 of Method 106 or by (b) calibrating it against vinyl chloride cylinder Standard Reference Materials (SRM's) prepared by the National Bureau of Standards, if such SRM's are available. The agreement between the initially determined concentration value and the verification concentration value must be within 5 percent. The manufacturer must reverify all calibration standards on a time interval consistent with the shelf life of the cylinder standards sold.

#### 8. Procedure

##### 8.1 Sampling.

8.1.1 PVC Sampling. Allow the resin or slurry to flow from a tap on the tank or silo until the tap line has been well purged. Extend and fill a 60-ml sample bottle under the tap, and immediately tighten a cap on the bottle. Wrap adhesive tape around the cap and bottle to prevent the cap from loosening. Place an identifying label on each bottle, and record the date, time, and sample location both on the bottles and in a log book. All samples should be kept refrigerated.

8.1.2 Water Sampling. At the sampling location fill the vials bubble-free to overflowing so that a convex meniscus forms at the top. The excess water is displaced as the sealing disc is carefully placed, with the Teflon side down, on the opening of the vial.

Place the aluminum seal over the disc and the neck of the vial, and crimp into place. Affix an identifying label on the bottle, and record the date, time, and sample location both on the vials and in a log book. All samples must be kept refrigerated until analyzed.

8.2 Sample Recovery. Samples must be run within 24 hours.

8.2.1 Resin Samples. The weight of the resin used must be between 0.1 and 4.5 grams. An exact weight must be obtained ( $\pm 1$  percent) for each sample. In the case of suspension resins, a volumetric cup can be prepared for holding the required amount of sample. When the cup is used, open the sample bottle, and add the cup volume of resin to the tared sample vial (tared, including septum

and aluminum cap). Obtain the exact sample weight, add 100 $\mu$ l or about two equal drops of water, and immediately seal the vial. Report this value on the data sheet; it is required for calculation of RVCM. In the case of dispersion resins, the cup cannot be used. Weigh the sample in an aluminum dish, transfer the sample to the tared vial, and accurately weigh it in the vial. After prepressurization of the samples, condition them for a minimum of 1 hour in the 90° C bath. Do not exceed 5 hours.

Prepressurization is not required if the sample weight, as analyzed, does not exceed 0.2 gram. It is also not required if solution of the prepressurization equation yields an absolute prepressurization value that is within 30 percent of the atmospheric pressure.

NOTE: Some aluminum vial caps have a center section that must be removed prior to placing into sample tray. If the cap is not removed, the injection needle will be damaged.

8.2.2 Suspension Resin Slurry and Wet Cake Samples. Decant the water from a wet cake sample, and turn the sample bottle upside down onto a paper towel. Wait for the water to drain, place approximately 0.2 to 4.0 grams of the wet cake sample in a tared vial (tared, including septum and aluminum cap) and seal immediately. Then determine the sample weight ( $\pm 1$  percent). All samples, weighing over 0.2 gram, must be prepressurized prior to conditioning for 1 hour at 90°C, except as noted in Section 8.2.1. A sample of wet cake is used to determine total solids (TS). This is required for calculating the RVCM.

8.2.3 Dispersion Resin Slurry and Geon Latex Samples. The materials should not be filtered. Sample must be thoroughly mixed. Using a tared vial (tared, including septum and aluminum cap) add approximately eight drops (0.25 to 0.35 g) of slurry or latex using a medicine dropper. This should be done immediately after mixing. Seal the vial as soon as possible. Determine sample weight ( $\pm 1$  percent). Condition the vial for 1 hour at 90 °C in the analyzer bath. Determine the TS on the slurry sample (Section 8.3.5).

8.2.4 Inprocess Wastewater Samples. Using a tared vial (tared, including septum and aluminum cap) quickly add approximately 1 cc of water using a medicine dropper. Seal the vial as soon as possible. Determine sample weight ( $\pm 1$  percent). Condition the vial for 1 hour at 90°C in the analyzer bath.

### 8.3 Analysis.

8.3.1 Preparation of Equipment. Install the chromatographic column and condition overnight at 160° C. In the first operation, Porapak columns must be purged for 1 hour at 230° C.

Do not connect the exit end of the column to the detector while conditioning. Hydrogen

and air to the detector must be turned off while the column is disconnected.

8.3.1.1 Flow Rate Adjustments. Adjust flow rates as follows:

a. Nitrogen Carrier Gas. Set regulator on cylinder to read 50 psig. Set regulator on chromatograph to produce a flow rate of 30.0 cc/min. Accurately measure the flow rate at the exit end of the column using the soap film flowmeter and a stopwatch, with the oven and column at the analysis temperature. After the instrument program advances to the "B" (backflush) mode, adjust the nitrogen pressure regulator to exactly balance the nitrogen flow rate at the detector as was obtained in the "A" mode.

b. Vial Prepressurizer Nitrogen. After the nitrogen carrier is set, solve the following equation and adjust the pressure on the vial prepressurizer accordingly.

$$P = \frac{T_1}{T_2} \left[ P_1 - \frac{P_{w1} - P_{w2}}{7.50} \right] - 10 \text{ k Pa}$$

Where:

$T_1$ =Ambient temperature, °K.

$T_2$ =Conditioning bath temperature, °K.

$P_1$ =Gas chromatograph absolute dosing pressure (analysis mode), k Pa.

$P_{w1}$ =Water vapor pressure @ 90° C (525.8 mm Hg).

$P_{w2}$ =Water vapor pressure @ 22° C (19.8 mm Hg).

7.50=mm Hg per k Pa.

10 k Pa=Factor to adjust the prepressurized pressure to slightly less than the dosing pressure.

Because of gauge errors, the apparatus may over-pressurize the vial. If the vial pressure is at or higher than the dosing pressure, an audible double injection will occur. If the vial pressure is too low, errors will occur on resin samples because of inadequate time for head-space gas equilibrium. This condition can be avoided by running several standard gas samples at various pressures around the calculated pressure, and then selecting the highest pressure that does not produce a double injection. All samples and standards must be pressurized for 60 seconds using the vial prepressurizer. The vial is then placed into the 90° C conditioning bath and tested for leakage by placing a drop of water on the septum at the needle hole. A clean, burr-free needle is mandatory.

c. Burner Air Supply. Set regulator on cylinder to read 50 psig. Set regulator on chromatograph to supply air to burner at a rate between 250 and 300 cc/min. Check with bubble flowmeter.

d. Hydrogen Supply. Set regulator on cylinder to read 30 psig. Set regulator on chromatograph to supply approximately 35  $\pm$  5 cc/min. Optimize hydrogen flow to yield the

most sensitive detector response without extinguishing the flame. Check flow with bubble meter and record this flow.

8.3.1.2 Temperature Adjustments. Set temperatures as follows:

- a. Oven (chromatograph column), 140° C.
- b. Dosing Line, 150° C.
- c. Injection Block, 170° C.
- d. Sample Chamber, Water Temperature, 90° C ± 1.0° C.

8.3.1.3 Ignition of Flame Ionization Detector. Ignite the detector according to the manufacturer's instructions.

8.3.1.4 Amplifier Balance. Balance the amplifier according to the manufacturer's instructions.

8.3.2 Programming the Chromatograph. Program the chromatograph as follows:

- a. I—Dosing or Injection Time. The normal setting is 2 seconds.
- b. A—"Analysis Time." The normal setting is approximately 70 percent of the VCM retention time. When this timer terminates, the programmer initiates backflushing of the first column.
- c. B—Backflushing Time. The normal setting is double the "analysis time."
- d. W—Stabilization Time. The normal setting is 0.5 min to 1.0 min.
- e. X—Number of Analyses Per Sample. The normal setting is one.

8.3.3 Preparation of Sample Turntable. Before placing any sample into turntable, be certain that the center section of the aluminum cap has been removed. The numbered sample vials should be placed in the corresponding numbered positions in the turntable. Insert samples in the following order:

Position 1 and 2—Old 2000-ppm standards for conditioning. These are necessary only after the analyzer has not been used for 24 hours or longer.

Position 3—50-ppm standard, freshly prepared.

Position 4—500-ppm standard, freshly prepared.

Position 5—2000-ppm standard, freshly prepared.

Position 6—4000-ppm standard, freshly prepared.

Position 7—Sample No. 7 (This is the first sample of the day, but is given as 7 to be consistent with the turntable and the integrator printout.)

After all samples have been positioned, insert the second set of 50-, 500-, 2000-, and 4000-ppm standards. Samples, including standards, must be conditioned in the bath of 90° C for 1 hour (not to exceed 5 hours).

8.3.4 Start Chromatograph Program. When all samples, including standards, have been conditioned at 90° C for 1 hour, start the analysis program according to the manufacturer's instructions. These instructions must be carefully followed when starting and stopping a program to prevent damage to the dosing assembly.

8.3.5 Determination of TS. For wet cake, slurry, resin solution, and PVC latex samples, determine TS for each sample by accurately weighing approximately 3 to 4 grams of sample in an aluminum pan before and after placing in a draft oven (105 to 110° C). Samples must be dried to constant weight. After first weighing, return the pan to the oven for a short period of time, and then reweigh to verify complete dryness. The TS are then calculated as the final sample weight divided by initial sample weight.

#### 9. Calibration

Calibration is to be performed each 8-hour period the chromatograph is used. Alternatively, calibration with duplicate 50-, 500-, 2,000-, and 4,000-ppm standards (hereafter described as a four-point calibration) may be performed on a monthly basis, provided that a calibration confirmation test consisting of duplicate analyses of an appropriate standard is performed once per plant shift, or once per chromatograph carousel operation (if the chromatograph operation is less frequent than once per shift). The criterion for acceptance of each calibration confirmation test is that both analyses of 500-ppm standards [2,000-ppm standards if dispersion resin (excluding latex resin) samples are being analyzed] must be within 5 percent of the most recent four-point calibration curve. If this criterion is not met, then a complete four-point calibration must be performed before sample analyses can proceed.

9.1 Preparation of Standards. Calibration standards are prepared as follows: Place 100ul or about two equal drops of distilled water in the sample vial, then fill the vial with the VCM/nitrogen standard, rapidly seat the septum, and seal with the aluminum cap. Use a 1/8-in. stainless steel line from the cylinder to the vial. Do not use rubber or Tygon tubing. The sample line from the cylinder must be purged (into a properly vented hood) for several minutes prior to filling the vials. After purging, reduce the flow rate to 500 to 1000 cc/min. Place end of tubing into vial (near bottom). Position a septum on top of the vial, pressing it against the 1/8-in. filling tube to minimize the size of the vent opening. This is necessary to minimize mixing air with the standard in the vial. Each vial is to be purged with standard for 90 seconds, during which time the filling tube is gradually slid to the top of the vial. After the 90 seconds, the tube is removed with the septum, simultaneously sealing the vial. Practice will be necessary to develop good technique. Rubber gloves should be worn during the above operations. The sealed vial must then be pressurized for 60 seconds using the vial prepressurizer. Test the vial for leakage by placing a drop of water on the septum at the needle hole. Prepressurization of standards is not required unless samples have been prepressurized.

## 9.2 Preparation of Chromatograph Calibration Curve.

Prepare two vials each of 50-, 500-, 2,000-, and 4,000-ppm standards. Run the calibration samples in exactly the same manner as regular samples. Plot  $A_s$ , the integrator area counts for each standard sample, versus  $C_c$ , the concentration of vinyl chloride in each standard sample. Draw a straight line through the points derived by the least squares method.

## 10. Calculations

10.1 Response Factor. If the calibration curve described in Section 9.2 passes through zero, an average response factor,  $R_f$ , may be used to facilitate computation of vinyl chloride sample concentrations.

To compute  $R_f$ , first compute a response factor,  $R_s$ , for each sample as follows:

$$R_s = \frac{A_s}{C_c} \quad \text{Eq. 107-1}$$

where:

$R_s$ =Response factor, area counts/ppm.

$A_s$ =Chromatogram area counts of vinyl chloride for the sample, area counts.

$C_c$ =Concentration of vinyl chloride in the standard sample, ppm.

Sum the individual response factors, and calculate  $R_f$ . If the calibration curve does not pass through zero, use the calibration curve to determine each sample concentration.

10.2 Residual Vinyl Chloride Monomer Concentration, ( $C_{rvc}$ ) or Vinyl Chloride Monomer Concentration. Calculate  $C_{rvc}$  in ppm or mg/kg as follows:

$$C_{rvc} = \frac{A_s P_a}{R_f T_1} \left[ \frac{M_v V_g}{R m} + K_p (TS) T_2 + K_w (1 - TS) T_2 \right] \quad \text{Eq. 107-2}$$

Where:

$A_s$ =Chromatogram area counts of vinyl chloride for the sample.

$P_a$ =Ambient atmospheric pressure, mm Hg.

$R_f$ =Response factor in area counts per ppm VCM.

$T_1$ =Ambient laboratory temperature, °K.

$M_v$ =Molecular weight of VCM, 62.5 g/mole.

$V_g$ =Volume of vapor phase,  $\text{cm}^3$ .

$$= V_v - \frac{m(TS)}{1.36} - \frac{m(1-TS)}{0.9653}$$

$R$ =Gas constant, (62360  $\text{cm}^3$ ) (mm Hg)/(mole)(°K).

$m$ =Sample weight, g.

$K_p$ =Henry's Law Constant for VCM in PVC @ 90° C,  $6.52 \times 10^{-6}$  g/g/mm Hg.

$TS$ =Total solids expressed as a decimal fraction.

$T_2$ =Equilibrium temperature, °K.

$K_w$ =Henry's Law Constant for VCM in water @ 90° C,  $7 \times 10^{-7}$  g/g/mm Hg.

$V_v$ =Vial volume,  $\text{cm}^3$ .

1.36=Density of PVC at 90°C, g/ $\text{cm}^3$ .

0.9653=Density of water at 90°C, g/ $\text{cm}^3$ .

$$= V_v - \frac{m(TS)}{1.36} - \frac{m(1-TS)}{0.9653}$$

Results calculated using these equations represent concentration based on the total sample. To obtain results based on dry PVC content, divide by  $TS$ .

## 11. Bibliography

1. B.F. Goodrich, Residual Vinyl Chloride Monomer Content of Polyvinyl Chloride Resins, Latex, Wet Cake, Slurry and Water Samples. B.F. Goodrich Chemical Group Standard Test Procedure No. 1005-E. B.F. Goodrich Technical Center, Avon Lake, Ohio. October 8, 1979.

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5. Mansfield, R.A. The Evaluation of Henry's Law Constant ( $K_p$ ) and Water Enhancement in the Perkin-Elmer Multifract

F-40 Gas Chromatograph. B.F. Goodrich. Avon Lake, Ohio. February 10, 1978.

METHOD 107A—DETERMINATION OF VINYL CHLORIDE CONTENT OF SOLVENTS, RESIN-SOLVENT SOLUTION, POLYVINYL CHLORIDE RESIN, RESIN SLURRY, WET RESIN, AND LATEX SAMPLES

#### Introduction

Performance of this method should not be attempted by persons unfamiliar with the operation of a gas chromatograph (GC) or by those who are unfamiliar with source sampling because knowledge beyond the scope of this presentation is required. Care must be exercised to prevent exposure of sampling personnel to vinyl chloride, a carcinogen.

#### 1. Applicability and Principle

1.1 Applicability. This is an alternative method and applies to the measurement of the vinyl chloride content of solvents, resin solvent solutions, polyvinyl chloride (PVC) resin, wet cake slurries, latex, and fabricated resin samples. This method is not acceptable where methods from Section 304(h) of the Clean Water Act, 33 U.S.C. 1251 et seq., (the Federal Water Pollution Control Act Amendments of 1972 as amended by the Clean Water Act of 1977) are required.

1.2 Principle. The basis for this method lies in the direct injection of a liquid sample into a chromatograph and the subsequent evaporation of all volatile material into the carrier gas stream of the chromatograph, thus permitting analysis of all volatile material including vinyl chloride.

#### 2. Range and Sensitivity

The lower limit of detection of vinyl chloride in dry PVC resin is 0.2 ppm. For resin solutions, latexes, and wet resin, this limit rises inversely as the nonvolatile (resin) content decreases.

With proper calibration, the upper limit may be extended as needed.

#### 3. Interferences

The chromatograph columns and the corresponding operating parameters herein described normally provide an adequate resolution of vinyl chloride. In cases where resolution interferences are encountered, the chromatograph operator shall select the column and operating parameters best suited to his particular analysis problem, subject to the approval of the Administrator. Approval is automatic, provided that the tester produces confirming data through an adequate supplemental analytical technique, such as analysis with a different column or GC/mass spectroscopy, and has the data available for review by the Administrator.

#### 4. Precision and Reproducibility

A standard sample of latex containing 181.8 ppm vinyl chloride analyzed 10 times by the alternative method showed a standard deviation of 7.5 percent and a mean error of 0.21 percent.

A sample of vinyl chloride copolymer resin solution was analyzed 10 times by the alternative method and showed a standard deviation of 6.6 percent at a level of 35 ppm.

#### 5. Safety

Do not release vinyl chloride to the laboratory atmosphere during preparation of standards. Venting or purging with vinyl chloride monomer (VCM) air mixtures must be held to minimum. When purging is required, the vapor must be routed to outside air. Vinyl chloride, even at low-ppm levels, must never be vented inside the laboratory.

#### 6. Apparatus

6.1 Sampling. The following equipment is required:

6.1.1 Glass Bottles. 16-oz wide mouth wide polyethylene-lined, screw-on tops.

6.1.2 Adhesive Tape. To prevent loosening of bottle tops.

6.2 Sample Recovery. The following equipment is required:

6.2.1 Glass Vials. 20-ml capacity with polycone screw caps.

6.2.2 Analytical Balance. Capable of weighing to  $\pm 0.01$  gram.

6.2.3 Syringe. 50-microliter size, with removable needle.

6.2.4 Fritted Glass Sparger. Fine porosity.

6.2.5 Aluminum Weighing Dishes.

6.2.6 Sample Roller or Shaker. To help dissolve sample.

6.3 Analysis. The following equipment is required:

6.3.1 Gas Chromatograph. Hewlett Packard Model 5720A or equivalent.

6.3.2 Chromatograph Column. Stainless steel, 6.1 m by 3.2 mm, packed with 20 percent Tergitol E-35 on Chromosorb W AW 60/80 mesh. The analyst may use other columns provided that the precision and accuracy of the analysis of vinyl chloride standards are not impaired and that he has available for review information confirming that there is adequate resolution of the vinyl chloride peak. (Adequate resolution is defined as an area overlap of not more than 10 percent of the vinyl chloride peak by an interfering peak. Calculation of area overlap is explained in Appendix C, Procedure 1: "Determination of Adequate Chromatographic Peak Resolution.")

6.3.3 Valco Instrument Six-Port Rotary Valve. For column back flush.

6.3.4 Septa. For chromatograph injection port.

6.3.5 Injection Port Liners. For chromatograph used.

6.3.6 Regulators. For required gas cylinders.

6.3.7 Soap Film Flowmeter. Hewlett Packard No. 0101-0113 or equivalent.

6.4 Calibration. The following equipment is required:

6.4.1 Analytical Balance. Capable of weighing to  $\pm 0.0001$  g.

6.4.2 Erlenmeyer Flask With Glass Stopper. 125 ml.

6.4.3 Pipets. 0.1, 0.5, 1, 5, 10, and 50 ml.

6.4.4 Volumetric Flasks. 10 and 100 ml.

#### 7. Reagents

Use only reagents that are of chromatograph grade.

7.1 Analysis. The following items are required:

7.1.1 Hydrogen Gas. Zero grade.

7.1.2 Nitrogen Gas. Zero grade.

7.1.3 Air. Zero grade.

7.1.4 Tetrahydrofuran (THF). Reagent grade.

Analyze the THF by injecting 10 microliters into the prepared gas chromatograph. Compare the THF chromatogram with that shown in Figure 107A-1. If the chromatogram is comparable to A, the THF should be sparged with pure nitrogen for approximately 2 hours using the fritted glass sparger to attempt to remove the interfering peak. Reanalyze the sparged THF to determine whether the THF is acceptable for use. If the scan is comparable to B, the THF should be acceptable for use in the analysis.

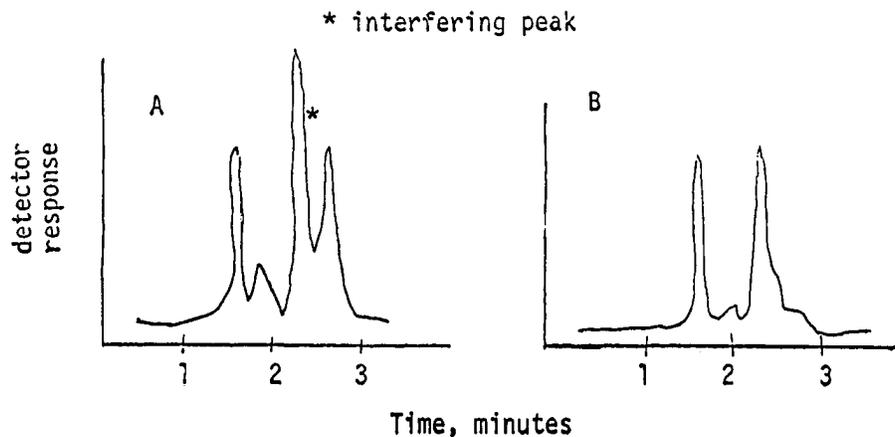


Figure 107A-1

7.1.5 N, N-Dimethylacetamide (DMAC). Spectrographic grade. For use in place of THF.

7.2 Calibration. The following item is required:

7.2.1 Vinyl Chloride 99.9 Percent. Ideal Gas Products lecture bottle, or equivalent. For preparation of standard solutions.

#### 8. Procedure

8.1 Sampling. Allow the liquid or dried resin to flow from a tap on the tank, silo, or pipeline until the tap has been purged. Fill a wide-mouth pint bottle, and immediately tightly cap the bottle. Place an identifying label on each bottle and record the date, time, sample location, and material.

8.2 Sample Treatment. Sample must be run within 24 hours.

8.2.1 Resin Samples. Weigh  $9.00 \pm 0.01$  g of THF or DMAC in a tared 20-ml vial. Add  $1.00 \pm 0.01$  g of resin to the tared vial containing the THF or DMAC. Close the vial tightly with the screw cap, and shake or otherwise

agitate the vial until complete solution of the resin is obtained. Shaking may require several minutes to several hours, depending on the nature of the resin.

8.2.2 Suspension Resin Slurry and Wet Resin Sample. Slurry must be filtered using a small Buchner funnel with vacuum to yield a wet resin sample. The filtering process must be continued only as long as a steady stream of water is exiting from the funnel. Excessive filtration time could result in some loss of VCM. The wet resin sample is weighed into a tared 20-ml vial with THF or DMAC as described earlier for resin samples (8.2.1) and treated the same as the resin sample. A sample of the wet resin is used to determine total solids as required for calculating the residual VCM (Section 8.3.4).

8.2.3 Latex and Resin Solvent Solutions. Samples must be thoroughly mixed. Weigh  $1.00 \pm 0.01$  g of the latex or resin-solvent solution into a 20-ml vial containing  $9.00 \pm 0.01$  g

of THF or DMAC as for the resin samples (8.2.1). Cap and shake until complete solution is obtained. Determine the total solids of the latex or resin solution sample (Section 8.3.4).

8.2.4 Solvents and Non-viscous Liquid Samples. No preparation of these samples is required. The neat samples are injected directly into the GC.

### 8.3 Analysis.

8.3.1 Preparation of GC. Install the chromatographic column, and condition overnight at 70° C. Do not connect the exit end of the column to the detector while conditioning.

8.3.1.1 Flow Rate Adjustments. Adjust the flow rate as follows:

a. Nitrogen Carrier Gas. Set regulator on cylinder to read 60 psig. Set column flow controller on the chromatograph using the soap film flowmeter to yield a flow rate of 40 cc/min.

b. Burner Air Supply. Set regulator on the cylinder at 40 psig. Set regulator on the chromatograph to supply air to the burner to yield a flow rate of 250 to 300 cc/min using the flowmeter.

c. Hydrogen. Set regulator on cylinder to read 60 psig. Set regulator on the chromatograph to supply 30 to 40 cc/min using the flowmeter. Optimize hydrogen flow to yield the most sensitive detector response without extinguishing the flame. Check flow with flowmeter and record this flow.

d. Nitrogen Back Flush Gas. Set regulator on the chromatograph using the soap film flowmeter to yield a flow rate of 40 cc/min.

8.3.1.2 Temperature Adjustments. Set temperature as follows:

a. Oven (chromatographic column) at 70° C.

b. Injection Port at 100° C.

c. Detector at 300° C.

8.3.1.3 Ignition of Flame Ionization Detector. Ignite the detector according to the manufacturer's instructions. Allow system to stabilize approximately 1 hour.

8.3.1.4 Recorder. Set pen at zero and start chart drive.

8.3.1.5 Attenuation. Set attenuation to yield desired peak height depending on sample VCM content.

### 8.3.2 Chromatographic Analyses.

a. Sample Injection. Remove needle from 50-microliter syringe. Open sample vial and draw 50-microliters of THF or DMAC sample recovery solution into the syringe. Recap sample vial. Attach needle to the syringe and while holding the syringe vertically (needle uppermost), eject 40 microliters into an absorbent tissue. Wipe needle with tissue. Now inject 10 microliters into chromatograph system. Repeat the injection until two consecutive values for the height of the vinyl chloride peak do not vary more than 5 percent. Use the average value for these two peak heights to compute the sample concentration.

b. Back Flush. After 4 minutes has elapsed after sample injection, actuate the back flush valve to purge the first 4 feet of the chromatographic column of solvent and other high boilers.

c. Sample Data. Record on the chromatograph strip chart the data from the sample label.

d. Elution Time. Vinyl chloride elutes at 2.8 minutes. Acetaldehyde elutes at 3.7 minutes. Analysis is considered complete when chart pen becomes stable. After 5 minutes, reset back flush valve and inject next sample.

### 8.3.3 Chromatograph Servicing.

a. Septum. Replace after five sample injections.

b. Sample Port Liner. Replace the sample port liner with a clean spare after five sample injections.

c. Chromatograph Shutdown. If the chromatograph has been shut down overnight, rerun one or more samples from the preceding day to test stability and precision prior to starting on the current day's work.

8.3.4 Determination of Total Solids (TS). For wet resin, resin solution, and PVC latex samples, determine the TS for each sample by accurately weighing approximately 3 to 5 grams of sample into a tared aluminum pan. The initial procedure is as follows:

a. Where water is the major volatile component: Tare the weighing dish, and add 3 to 5 grams of sample to the dish. Weigh to the nearest milligram.

b. Where volatile solvent is the major volatile component: Transfer a portion of the sample to a 20-ml screw cap vial and cap immediately. Weigh the vial to the nearest milligram. Uncap the vial and transfer a 3- to 5-gram portion of the sample to a tared aluminum weighing dish. Recap the vial and reweigh to the nearest milligram. The vial weight loss is the sample weight.

To continue, place the weighing pan in a 130° C oven for 1 hour. Remove the dish and allow to cool to room temperature in a desiccator. Weigh the pan to the nearest 0.1 mg. Total solids is the weight of material in the aluminum pan after heating divided by the net weight of sample added to the pan originally times 100.

## 9. Calibration of the Chromatograph

9.1 Preparation of Standards. Prepare a 1 percent by weight (approximate) solution of vinyl chloride in THF or DMAC by bubbling vinyl chloride gas from a cylinder into a tared 125-ml glass-stoppered flask containing THF or DMAC. The weight of vinyl chloride to be added should be calculated prior to this operation, i.e., 1 percent of the weight of THF or DMAC contained in the tared flask. This must be carried out in a laboratory hood. Adjust the vinyl chloride flow from the cylinder so that the vinyl chloride dissolves essentially completely in the THF or DMAC

and is not blown to the atmosphere. Take particular care not to volatilize any of the solution. Stopper the flask and swirl the solution to effect complete mixing. Weigh the stoppered flask to nearest 0.1 mg to determine the exact amount of vinyl chloride added.

Pipet 10 ml of the approximately 1 percent solution into a 100-ml glass-stoppered volumetric flask, and add THF or DMAC to fill to the mark. Cap the flask and invert 10 to 20 times. This solution contains approximately 1,000 ppm by weight of vinyl chloride (note the exact concentration).

Pipet 50-, 10-, 5-, 1-, 0.5-, and 0.1-ml aliquots of the approximately 1,000 ppm solution into 10 ml glass stoppered volumetric flasks. Dilute to the mark with THF or DMAC, cap the flasks and invert each 10 to 20 times. These solutions contain approximately 500, 100, 50, 10, 5, and 1 ppm vinyl chloride. Note the exact concentration of each one. These standards are to be kept under refrigeration in stoppered bottles, and must be renewed every 3 months.

#### 9.2 Preparation of Chromatograph Calibration Curve.

Obtain the GC for each of the six final solutions prepared in Section 9.1 by using the procedure in Section 8.3.2. Prepare a chart plotting peak height obtained from the chromatogram of each solution versus the known concentration. Draw a straight line through the points derived by the least squares method.

#### 10. Calculations

10.1 Response Factor. From the calibration curve described in Section 9.2, select the value of  $C_c$  that corresponds to  $H_c$  for each sample. Compute the response factor,  $R_f$ , for each sample as follows:

$$R_f = \frac{C_c}{H_c} \quad \text{Eq. 107A-1}$$

where:

$R_f$ =Chromatograph response factor, ppm/mm.

$C_c$ =Concentration of vinyl chloride in the standard sample, ppm.

$H_c$ =Peak height of the standard sample, mm.

10.2 Residual vinyl chloride monomer concentration ( $C_{rvc}$ ) or vinyl chloride monomer concentration in resin:

$$C_{rvc} = 10H_sR_f \quad \text{Eq. 107A-2}$$

Where:

$C_{rvc}$ =Concentration of residual vinyl chloride monomer, ppm.

$H_s$ =Peak height of sample, mm.

$R_f$ =Chromatograph response factor.

10.3 Samples containing volatile material, i.e., resin solutions, wet resin, and latexes:

$$C_{rvc} = \frac{H_sR_f(1,000)}{TS} \quad \text{Eq. 107A-3}$$

where:

TS=Total solids in the sample, weight fraction.

10.4 Samples of solvents and in process wastewater:

$$C_{rvc} = \frac{H_sR_f}{0.888} \quad \text{Eq. 107A-4}$$

Where:

0.888=Specific gravity of THF.

#### 11. Bibliography

1. Communication from R. N. Wheeler, Jr.; Union Carbide Corporation. Part 61 National Emissions Standards for Hazardous Air Pollutants appendix B, Method 107—Alternate Method, September 19, 1977.

#### METHOD 108—DETERMINATION OF PARTICULATE AND GASEOUS ARSENIC EMISSIONS

##### 1. Applicability and Principle

1.1 Applicability. This method applies to the determination of inorganic arsenic (As) emissions from stationary sources as specified in the applicable subpart.

1.2 Principle. Particulate and gaseous arsenic emissions are withdrawn isokinetically from the source and collected on a glass mat filter and in water. The collected arsenic is then analyzed by means of atomic absorption spectrophotometry.

##### 2. Apparatus

2.1 Sampling Train. A schematic of the sampling train is shown in Figure 108-1; it is similar to the Method 5 train of 40 CFR part 60, appendix A. Note: This and all subsequent references to other methods refer to the methods in 40 CFR part 60, appendix A. The sampling train consists of the following components:

2.1.1 Probe Nozzle, Probe Liner, Pitot Tube, Differential Pressure Gauge, Filter Holder, Filter Heating System, Metering System, Barometer, and Gas Density Determination Equipment. Same as Method 5, Sections 2.1.1 to 2.1.6 and 2.1.8 to 2.1.10, respectively.

2.1.2 Filter Heating System. Any heating (or cooling) system capable of maintaining a sample gas temperature at the exit end of the filter holder during sampling at  $121 \pm 14^\circ\text{C}$  ( $250 \pm 25^\circ\text{F}$ ). Install a temperature gauge capable of measuring temperature to within  $3^\circ\text{C}$  ( $5.4^\circ\text{F}$ ) at the exit end of the filter holder so that the sample gas temperature can be regulated and monitored during sampling. The tester may use systems other than the one shown in APTD-0591.

2.1.3 Impingers. Four impingers connected in series with leak-free ground-glass fittings or any similar leak-free noncontaminating fittings. For the first, third, and fourth impingers, use the Greenburg-Smith design, modified by replacing the tip with a 1.3-cm-ID (0.5 in.) glass tube extending to about 1.3 cm (0.5 in.) from the bottom of the flask. For the second impinger, use the Greenburg-Smith design with the standard tip. The

tester may use modifications (e.g., flexible connections between the impingers, materials other than glass, or flexible vacuum lines to connect the filter holder to the condenser), subject to the approval of the Administrator.

Place a thermometer, capable of measuring temperature to within 1°C (2°F), at the outlet of the fourth impinger for monitoring purposes.

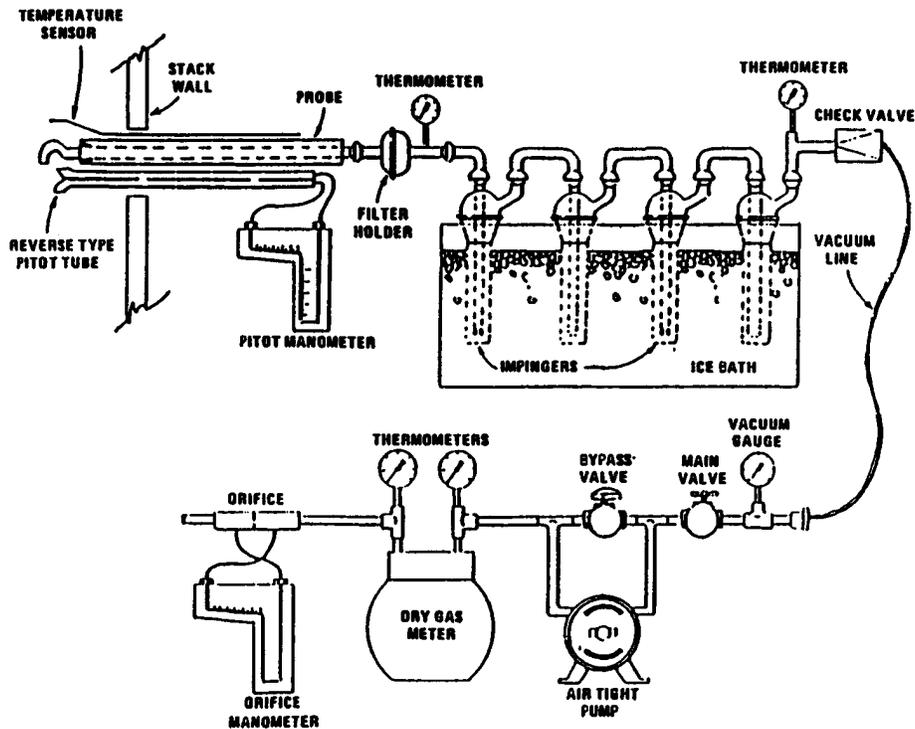


Figure 108-1. Arsenic sampling train.

2.2 Sample Recovery. The following items are needed:

2.2.1 Probe-Liner and Probe-Nozzle Brushes, Petri Dishes, Graduated Cylinder or Balance, Plastic Storage Containers, Rubber Policeman, and Funnel. Same as Method 5, Sections 2.2.1 and 2.2.4 to 2.2.8, respectively.

2.2.2 Wash Bottles. Polyethylene (2).

2.2.3 Sample Storage Containers. Chemically resistant, polyethylene or polypropylene for glassware washes, 500- or 1000-ml.

2.3 Analysis. The following equipment is needed:

2.3.1 Spectrophotometer. Equipped with an electrodeless discharge lamp and a background corrector to measure absorbance at 193.7 nm. For measuring samples having less than 10 µg As/ml, use a vapor generator accessory or a graphite furnace.

2.3.2 Recorder. To match the output of the spectrophotometer.

2.3.3 Beakers. 150-ml.

2.3.4 Volumetric Flasks. Glass 50-, 100-, 200-, 500-, and 1000-ml; and polypropylene, 50-ml.

2.3.5 Balance. To measure within 0.5 g.

2.3.6 Volumetric Pipets. 1-, 2-, 3-, 5-, 8-, and 10-ml.

2.3.7 Oven.

2.3.8 Hot Plate.

### 3. Reagents

Unless otherwise specified, use American Chemical Society reagent grade (or equivalent) chemicals throughout.

3.1 Sampling. The reagents used in sampling are as follows:

3.1.1 Filters. Same as Method 5 except that the filters need not be unreactive to SO<sub>2</sub>.

3.1.2 Silica Gel, Crushed Ice, and Stopcock Grease. Same as Method 5, Sections 3.1.2, 3.1.4, and 3.1.5, respectively.

3.1.3 Water. Deionized distilled to meet American Society for Testing and Materials Specification D 1133-74, Type 3 (incorporated by reference—see §60.17). When high concentrations of organic matter are not expected to be present, the analyst may omit the KMnO<sub>4</sub> test for oxidizable organic matter.

3.2 Sample Recovery. 0.1 N sodium hydroxide (NaOH) is required. Dissolve 4.00 g of NaOH in about 500 ml of water in a 1-liter volumetric flask. Then, dilute to exactly 1.0 liter with water.

3.3 Analysis. The reagents needed for analysis are as follows:

3.3.1 Water. Same as 3.1.3.

3.3.2 Sodium Hydroxide, 0.1 N. Same as 3.2.

3.3.3 Sodium Borohydride (NaBH<sub>4</sub>), 5 Percent (W/V). Dissolve 5.00 g of NaBH<sub>4</sub> in about 500 ml of 0.1 N NaOH in a 1-liter volumetric flask. Then, dilute to exactly 1.0 liter with 0.1 N NaOH.

3.3.4 Hydrochloric Acid (HCl), Concentrated.

3.3.5 Potassium Iodide (KI), 30 Percent (W/V). Dissolve 300 g of KI in 500 ml of water in a 1-liter volumetric flask. Then, dilute to exactly 1.0 liter with water.

3.3.6 Nitric Acid (HNO<sub>3</sub>), Concentrated.

3.3.7 Nitric Acid, 0.8 N. Dilute 52 ml of concentrated HNO<sub>3</sub> to exactly 1.0 liter with water.

3.3.8 Nitric Acid, 50 Percent (V/V). Add 50 ml concentrated HNO<sub>3</sub> to 50 ml water.

3.3.9 Stock Arsenic Standard, 1 mg As/ml. Dissolve 1.3203 g of primary standard grade As<sub>2</sub>O<sub>3</sub> in 20 ml of 0.1 N NaOH in a 150-ml beaker. Slowly add 30 ml of concentrated HNO<sub>3</sub>. Heat the resulting solution and evaporate just to dryness. Transfer the residue quantitatively to a 1-liter volumetric flask and dilute to 1.0 liter with water.

3.3.10 Arsenic Working Solution, 1.0 µg As/ml. Pipet exactly 1.0 ml of stock arsenic standard into an acid-cleaned, appropriately labeled 1-liter volumetric flask containing about 500 ml of water and 5 ml of concentrated HNO<sub>3</sub>. Dilute to exactly 1.0 liter with water.

3.3.11 Air. Suitable quality for atomic absorption analysis.

3.3.12 Acetylene. Suitable quality for atomic absorption analysis.

3.3.13 Nickel Nitrate, 5 Percent (W/V). Dissolve 24.780 g of nickel nitrate hexahydrate in water in a 100-ml volumetric flask and dilute to 100 ml with water.

3.3.14 Nickel Nitrate, 1 Percent (W/V). Pipet 20 ml of 5 percent nickel nitrate solution into a 100-ml volumetric flask and dilute to exactly 100 ml with water.

3.3.15 Hydrogen Peroxide, 3 Percent. Pipet 50 ml of 30 percent hydrogen peroxide into a 500 ml volumetric flask and dilute to exactly 500 ml with water.

3.3.16 Quality Assurance Audit Samples. Arsenic samples prepared by the Environmental Protection Agency's (EPA) Environmental Systems Laboratory, Quality Assurance Division, Source Branch, Mail Drop 77A, Research Triangle Park, North Carolina 27711. Each set will consist of two vials of unknown concentrations. Only when making compliance determinations, obtain an audit sample set from the Quality Assurance Management Office at each EPA regional office or the responsible enforcement office. (Note: The tester should notify the Quality Assurance Office or the responsible enforcement agency at least 30 days prior to the test date to allow sufficient time for delivery.)

### 4. Procedure

4.1 Sampling. Because of the complexity of this method, testers must be trained and experienced with the test procedures in order to obtain reliable results.

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4.1.1 Pretest Preparation. Follow the general procedure given in Method 5, Section 4.1.1, except the filter need not be weighed.

4.1.2 Preliminary Determinations. Follow the general procedure given in Method 5, Section 4.1.2, except select the nozzle size to maintain isokinetic sampling rates below 28 liters/min (1.0 cfm).

4.1.3 Preparation of Collection Train. Follow the general procedure given in Method 5, Section 4.1.3.

4.1.4 Leak-Check Procedures. Follow the leak-check procedures given in Method 5,

Sections 4.1.4.1 (Pretest Leak-Check), 4.1.4.2 (Leak-Checks During Sample Run), and 4.1.4.3 (Post-Test Leak-Check).

4.1.5 Arsenic Train Operation. Follow the general procedure given in Method 5, Section 4.1.5, except maintain a temperature of 107° to 135°C (225° to 275°F) around the filter and maintain isokinetic sampling flow rates below 28 liters/min (1.0 cfm). For each run, record the data required on a data sheet such as the one shown in Figure 108-2m.

4.1.6 Calculation of Percent Isokinetic. Same as Method 5, Section 4.1.6.



4.2 Sample Recovery. The same as Method 5, Section 4.2 except that 0.1 N NaOH is used as the cleanup solvent instead of acetone and that the impinger water is treated as follows:

Container Number 4 (Impinger Water). Clean each of the first two impingers and connecting glassware in the following manner:

a. Wipe the impinger ball joints free of silicone grease, and cap the joints.

b. Weigh the impinger and liquid to within  $\pm 0.5$  g. Record in the log the weight of liquid along with a notation of any color or film observed in the impinger catch. The weight of liquid is needed along with the silica gel data to calculate the stack gas moisture content.

c. Rotate and agitate each impinger, using the impinger contents as a rinse solution.

d. Transfer the liquid to Container Number 4. Remove the outlet ball-joint cap, and drain the contents through this opening. Do not separate the impinger parts (inner and outer tubes) while transferring their contents to the cylinder.

e. (Note: In Steps e and f below, measure and record the total amount of 0.1 N NaOH used for rinsing.) Pour approximately 30 ml of 0.1 N NaOH into each of the first two impingers, and agitate the impingers. Drain the 0.1 N NaOH through the outlet arm of each impinger into Container Number 4. Repeat this operation a second time; inspect the impingers for any abnormal conditions.

f. Wipe the ball joints of the glassware connecting the impingers and the back half of the filter holder free of silicone grease, and rinse each piece of glassware twice with 0.1 N NaOH; transfer this rinse into Container Number 4. (DO NOT RINSE or brush the glass-fritted filter support.) Mark the height of the fluid level to determine whether leakage occurs during transport. Label the container to identify clearly its contents.

4.2.1 Blanks. Save a portion of the 0.1 N NaOH used for cleanup as a blank. Take 200 ml of this solution directly from the wash bottle being used and place it in a plastic sample container labeled "NaOH blank." Also save a sample of the water, and place it in a container labeled "H<sub>2</sub>O blank."

#### 4.3 Arsenic Sample Preparation.

4.3.1 Container Number 1 (Filter). Place the filter and loose particulate matter in a 150-ml beaker. Also, add the filtered material from Container Number 2 (see Section 4.3.3). Add 50 ml of 0.1 N NaOH. Then stir and warm on a hot plate at low heat (do not boil) for about 15 minutes. Add 10 ml of concentrated HNO<sub>3</sub>, bring to a boil, then simmer for about 15 minutes. Filter the solution through a glass fiber filter. Wash with hot water, and catch the filtrate in a clean 150-ml beaker. Boil the filtrate, and evaporate to dryness. Cool, add 5 ml of 50 percent HNO<sub>3</sub>, and then warm and stir. Allow to cool. Transfer to a

50-ml volumetric flask, dilute to volume with water, and mix well.

4.3.2 Container Number 4 (Arsenic Impinger Sample).

Note: Prior to analysis, check the liquid level in Containers Number 2 and Number 4; confirm as to whether leakage occurred during transport on the analysis sheet. If a noticeable amount of leakage occurred, either void the sample or take steps, subject to the approval of the Administrator, to adjust the final results.

Transfer the contents of Container Number 4 to a 500-ml volumetric flask, and dilute to exactly 500 ml with water. Pipet 50 ml of the solution into a 150-ml beaker. Add 10 ml of concentrated HNO<sub>3</sub>, bring to a boil, and evaporate to dryness. Allow to cool, add 5 ml of 50 percent HNO<sub>3</sub>, and then warm and stir. Allow the solution to cool, transfer to a 50-ml volumetric flask, dilute to volume with water, and mix well.

4.3.3 Container Number 2 (Probe Wash). See note in 4.3.2 above. Filter (using a glass fiber filter) the contents of Container Number 2 into a 200-ml volumetric flask. Combine the filtered material with the contents of Container Number 1 (Filter).

Dilute the filtrate to exactly 200 ml with water. Then pipet 50 ml into a 150-ml beaker. Add 10 ml of concentrated HNO<sub>3</sub>, bring to a boil, and evaporate to dryness. Allow to cool, add 5 ml of 50 percent HNO<sub>3</sub>, and then warm and stir. Allow the solution to cool, transfer to a 50-ml volumetric flask, dilute to volume with water, and mix well.

4.3.4 Filter Blank. Determine a filter blank using two filters from each lot of filters used in the sampling. Cut each filter into strips, and treat each filter individually as directed in Section 4.3.1, beginning with the sentence, "Add 50 ml of 0.1 N NaOH."

4.3.5 0.1 N NaOH and Water Blanks. Treat separately 50 ml of 0.1 N NaOH and 50 ml water, as directed under Section 4.3.2, beginning with the sentence, "Pipet 50 ml of the solution into a 150-ml beaker."

4.4 Spectrophotometer Preparation. Turn on the power; set the wavelength, slit width, and lamp current; and adjust the background corrector as instructed by the manufacturer's manual for the particular atomic absorption spectrophotometer. Adjust the burner and flame characteristics as necessary.

#### 4.5 Analysis.

4.5.1 Arsenic Determination. Prepare standard solutions as directed under Section 5.1, and measure their absorbances against 0.8 N HNO<sub>3</sub>. Then, determine the absorbances of the filter blank and each sample using 0.8 N HNO<sub>3</sub> as a reference. If the sample concentration falls outside the range of the calibration curve, make an appropriate dilution with 0.8 N HNO<sub>3</sub> so that the final concentration falls within the range of the curve. Determine the arsenic concentration in the filter blank (i.e., the average of the two blank

values from each lot). Next, using the appropriate standard curve, determine the arsenic concentration in each sample fraction.

4.5.1.1 Arsenic Determination at Low Concentration. The lower limit of flame atomic absorption spectrophotometry is 10 µg As/ml. If the arsenic concentration of any sample is at a lower level, use the graphite furnace or vapor generator which is available as an accessory component. The analyst also has the option of using either of these accessories for samples whose concentrations are between 10 and 30 µg/ml. Follow the manufacturer's instructions in the use of such equipment.

4.5.1.1.1 Vapor Generator Procedure. Place a sample containing between 0 and 5 µg of arsenic in the reaction tube, and dilute to 15 ml with water. Since there is some trial and error involved in this procedure, it may be necessary to screen the samples by conventional atomic absorption until an approximate concentration is determined. After determining the approximate concentration, adjust the volume of the sample accordingly. Pipet 15 ml of concentrated HCl into each tube. Add 1 ml of 30 percent KI solution. Place the reaction tube into a 50°C water bath for 5 minutes. Cool to room temperature. Connect the reaction tube to the vapor generator assembly. When the instrument response has returned to baseline, inject 5.0 ml of 5 percent NaBH<sub>4</sub>, and integrate the resulting spectrophotometer signal over a 30-second time period.

4.5.1.1.2 Graphite Furnace Procedure. Dilute the digested sample so that a 5-ml aliquot contains less than 1.5 µg of arsenic. Pipet 5 ml of this digested solution into a 10-ml volumetric flask. Add 1 ml of the 1 percent nickel nitrate solution, 0.5 ml of 50 percent HNO<sub>3</sub>, and 1 ml of the 3 percent hydrogen peroxide and dilute to 10 ml with water. The sample is now ready to inject in the furnace for analysis.

Because instruments from different manufacturers are different, no detailed operating instructions will be given here. Instead, the analyst should follow the instructions provided with his particular instrument.

4.5.1.2 Check for Matrix Effects on the Arsenic Results. Same as Method 12, Section 5.4.2.

4.5.2 Container Number 3 (Silica Gel). The tester may conduct this step in the field. Weigh the spent silica gel (or silica gel plus impinger) to the nearest 0.5 g; record this weight.

4.6 Audit Analysis. Concurrently, analyze the two unknown audit samples with each set of compliance samples to evaluate the techniques of the analyst and the standards preparation. (Note: It is recommended that known quality control samples be analyzed prior to the compliance and audit sample analysis to optimize the system's accuracy and precision. One source of these samples is the Source Branch listed in Section 3.3.16.)

The same analyst, analytical reagents, and analytical system shall be used both for each set or sets of compliance samples and the EPA audit samples; if this condition is met, audit samples need not be included with any additional compliance analyses performed within the succeeding 30-day period for the same enforcement agency. An audit sample set may not be used to validate different sets of compliance samples under the jurisdiction of different enforcement agencies unless prior arrangements are made with both enforcement agencies.

Calculate the concentration in g/m<sup>3</sup> using the specified sample volume in the audit instructions. (Note: The analyst may determine immediately whether the audit analyses acceptable by reporting the audit results in g/m<sup>3</sup> and compliance results in µg/ml by telephone). Include the results of both audit samples, their identification numbers, and the analysts' names with the results of the compliance determination samples in appropriate reports to the EPA regional office or the appropriate enforcement agency. Include this information with subsequent compliance analyses for the same enforcement agency during the succeeding 30-day period.

#### 5. Calibration

Maintain a laboratory log of all calibrations.

5.1 Standard Solutions. For the high level procedure pipet 1, 3, 5, 8, and 10 ml of the 1.0-mg As/ml stock solution into separate 100-ml volumetric flasks, each containing 5 ml of concentrated HNO<sub>3</sub>. If the low level vapor generator procedure is used, pipet 1, 2, 3, and 5 ml of 1.0 µg As/ml standard solution into the separate reaction tubes. For the low level graphite furnace procedure, pipet 1, 5, 10 and 15 ml of 1.0 µg As/ml standard solution into the separate flasks along with 2 ml of the 5 percent nickel nitrate solution and 10 ml of the 3 percent hydrogen peroxide solution. Dilute to the mark with water. Then treat the standards in the same manner as the samples (Section 4.5.1).

Check these absorbances frequently against 0.8 N HNO<sub>3</sub> (reagent blank) during the analysis to insure that base-line drift has not occurred. Prepare a standard curve of absorbance versus concentration. (Note: For instruments equipped with direct concentration readout devices, preparation of a standard curve will not be necessary.) In all cases, follow calibration and operational procedures in the manufacturers' instruction manual.

5.2 Sampling Train Calibration. Calibrate the sampling train components according to the indicated Sections of Method 5: Probe Nozzle (Section 5.1), Pitot Tube Assembly (Section 5.2), Metering System (Section 5.3), Probe Heater (Section 5.4), Temperature

Gauges (Section 5.5), Leak Check of Metering System (Section 5.6), and Barometer (Section 5.7).

### 6. Calculations

#### 6.1 Nomenclature—

$B_{ws}$  = Water in the gas stream, proportion by volume.

$C_a$  = Concentration of arsenic as read from the standard curve,  $\mu\text{g}/\text{ml}$ .

$C_c$  = Actual audit concentration,  $\text{g}/\text{m}^3$ .

$C_d$  = Determined audit concentration,  $\text{g}/\text{m}^3$ .

$C_s$  = Arsenic concentration in stack gas, dry basis, converted to standard conditions,  $\text{g}/\text{dsm}^3$  ( $\text{g}/\text{dscf}$ ).

$E_a$  = Arsenic mass emission rate,  $\text{g}/\text{hr}$ .

$F_d$  = Dilution factor (equals 1 if the sample has not been diluted).

$I$  = Percent of isokinetic sampling.

$m_{bi}$  = Total mass of all four impingers and contents before sampling,  $\text{g}$ .

$m_{fi}$  = Total mass of all four impingers and contents after sampling,  $\text{g}$ .

$m_n$  = Total mass of arsenic collected in a specific part of the sampling train,  $\mu\text{g}$ .

$m_i$  = Total mass of arsenic collected in the sampling train,  $\mu\text{g}$ .

$T_m$  = Absolute average dry gas meter temperature (see Figure 108-2),  $^{\circ}\text{K}$  ( $^{\circ}\text{R}$ ).

$V_m$  = Volume of gas sample as measured by the dry gas meter,  $\text{dm}^3$  ( $\text{dcf}$ ).

$V_{m(\text{std})}$  = Volume of gas sample as measured by the dry gas meter correlated to standard conditions,  $\text{sm}^3$  ( $\text{scf}$ ).

$V_n$  = Volume of solution in which the arsenic is contained,  $\text{ml}$ .

$V_{w(\text{std})}$  = Volume of water vapor collected in the sampling train, corrected to standard conditions,  $\text{sm}^3$  ( $\text{scf}$ ).

$\Delta H$  = Average pressure differential across the orifice meter (see Figure 108-2),  $\text{mm H}_2\text{O}$  (in.  $\text{H}_2\text{O}$ ).

6.2 Average dry gas meter temperatures ( $T_m$ ) and average orifice pressure drop ( $\Delta H$ ). See data sheet (Figure 108-2).

6.3 Dry Gas Volume. Using data from this test, calculate  $V_{m(\text{std})}$  by using Eq. 5-1 of Method 5. If necessary, adjust the volume for leakages.

6.4 Volume of Water Vapor.

$$V_{w(\text{std})} = K_1 (m_{fi} - m_{bi}) \quad \text{Eq. 108-1}$$

Where:

$K_1 = 0.001334 \text{ m}^3/\text{g}$  for metric units.

$= 0.047012 \text{ ft}^3/\text{g}$  for English units.

6.5 Moisture Content.

$$B_{ws} = \frac{V_{w(\text{std})}}{V_{m(\text{std})} + V_{w(\text{std})}} \quad \text{Eq. 108-2}$$

6.6 Amount of arsenic collected.

6.6.1 Calculate the amount of arsenic collected in each part of sampling train, as follows:

$$m_n = C_a F_d V_n \quad \text{Eq. 108-3}$$

6.6.2 Calculate the total amount of arsenic collected in the sampling train as follows:

$$m_i = m_n(\text{filters}) + m_n(\text{probe}) + m_n(\text{impingers}) - m_n(\text{filter blank}) - m_n(\text{NaOH}) - m_n(\text{H}_2\text{O}) \quad \text{Eq. 108-4}$$

6.7 Calculate the arsenic concentration in the stack gas (dry basis, adjusted to standard conditions) as follows:

$$C_s = K_2 (m_i / V_{m(\text{std})}) \quad \text{Eq. 108-5}$$

Where:

$$K_2 = 10^{-6} \text{ g}/\mu\text{g}$$

6.8 Pollutant Mass Rate. Calculate the arsenic mass emission rate using the following equation.

$$E_a = C_s Q_{sd} \quad \text{Eq. 108-6}$$

The volumetric flow rate,  $Q_{sd}$ , should be calculated as indicated in Method 2.

6.9 Isokinetic Variation. Using data from this test, calculate  $I$ . Use Eq. 5-8 of Method 5.

6.10 Acceptable Results. Same as Method 5, Section 6.12.

6.11 Relative Error (RE) for QA Audits, Percent.

$$\text{RE} = \frac{C_d - C_c}{C_c} \times 100 \quad \text{Eq. 108-7}$$

### 7. Bibliography

1. Same as Citations 1 through 9 of Section 7, of Method 5.

2. Perkin Elmer Corporation. Analytical Methods for Atomic Absorption Spectrophotometry. 303-0152. Norwalk, Connecticut. September 1976. pp. 5-6.

3. Standard Specification for Reagent Water. In: Annual Book of American Society for Testing and Materials Standards. Part 31: Water, Atmospheric Analysis. American Society for Testing and Materials. Philadelphia, PA. 1974. pp. 40-42.

### METHOD 108A—DETERMINATION OF ARSENIC CONTENT IN ORE SAMPLES FROM NON-FERROUS SMELTERS

#### 1. Applicability and Principle

1.1 Applicability. This method applies to the determination of inorganic arsenic (As) content of process ore and reverberatory matte samples from nonferrous smelters and other sources as specified in the regulations.

1.2 Principle. Arsenic bound in ore samples is liberated by acid digestion and analyzed by atomic absorption spectrophotometry.

#### 2. Apparatus

##### 2.1 Sample Preparation

2.1.1 Parr Acid Digestion Bomb. Stainless steel with vapor-tight Teflon cup and cover.

2.1.2 Volumetric Pipets. 2- and 5-ml sizes.

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2.1.3 Volumetric Flask. 50-ml polypropylene with screw caps, (one needed per standard).

2.1.4 Funnel. Polyethylene or polypropylene.

2.1.5 Oven. Capable of maintaining a temperature of approximately 105°C.

2.1.6 Analytical Balance. To measure to within 0.1 mg.

### 2.2 Analysis.

2.2.1 Spectrophotometer and Recorder. Equipped with an electrodeless discharge lamp and a background corrector to measure absorbance at 193.7 nm. A graphite furnace may be used in place of the vapor generator accessory when measuring samples with low As levels. The recorder shall match the output of the spectrophotometer.

2.2.2 Volumetric Flasks. Class A, 50-ml (one needed per sample and blank).

2.2.3 Volumetric Pipets. Class A, 1-, 5-, 10-, and 25-ml sizes.

### 3. Reagents

Unless otherwise specified, use ACS reagent grade (or equivalent) chemicals throughout.

#### 3.1 Sample Preparation.

3.1.1 Water. Deionized distilled to meet American Society for Testing and Materials Specification D-1193-74, Type 3 (incorporated by reference—See §60.7). When high concentrations of organic matter are not expected to be present, the analyst may omit the KIInO<sub>4</sub> test for oxidizable organic matter. Use in all dilutions requiring water.

3.1.2 Nitric Acid (HNO<sub>3</sub>), Concentrated. HANDLE WITH CAUTION.

3.1.3 Nitric Acid, 0.5 N. In a 1-liter volumetric flask containing water, add 32 ml of concentrated HNO<sub>3</sub> and dilute to volume with water.

3.1.4 Hydrofluoric Acid (HF), Concentrated. HANDLE WITH CAUTION.

3.1.5 Potassium Chloride (KCl) Solution, 10 percent (w/v). Dissolve 10 g KCl in water, add 3 ml concentrated HNO<sub>3</sub>, and dilute to 100 ml.

3.1.6 Filter. Teflon filters, 3 micron porosity, 47mm size. (Available from Millipore Co., type FS, Catalog Number FSLW04700.)

3.1.7 Sodium Borohydride (NaBH<sub>4</sub>), 5 Percent (W/V). Dissolve 5.00 g of NaBH<sub>4</sub> in about 500 ml of 0.1 NaOH in a 1-liter volumetric flask. Then, dilute to exactly 1.0 liter with 0.1 NaOH.

3.1.8 Nickel Nitrate, 5 Percent (W/V). Dissolve 24.780 g of nickel nitrate hexahydrate in water in a 100-ml volumetric flask and dilute to 100 ml with water.

3.1.9 Nickel Nitrate, 1 percent (W/V). Pipet 20 ml of 5 percent nickel nitrate solution into a 100-ml volumetric flask and dilute to 100 ml with water.

#### 3.2 Analysis.

3.2.1 Water. Same as in Section 3.1.1.

3.2.2 Sodium Hydroxide (NaOH), 0.1 N. Dissolve 2.00 g of NaOH in water in a 500-ml volumetric flask. Dilute to volume with water.

3.2.3 Nitric Acid, 0.5 N. Same as in Section 3.1.3.

3.2.4 Potassium Chloride Solution, 10 percent. Same as in Section 3.1.5.

3.2.5 Stock Arsenic Standard, 1 mg As/ml. Dissolve 1.320 g of primary grade As<sub>2</sub>O<sub>3</sub> in 20 ml of 0.1 N NaOH. Slowly add 30 ml of concentrated HNO<sub>3</sub>, and heat in an oven at 105°C for 2 hours. Allow to cool, and dilute to 1 liter with deionized distilled water.

3.2.6 Nitrous Oxide. Suitable quality for atomic absorption analysis.

3.2.7 Acetylene. Suitable quality for atomic absorption analysis.

3.2.8 Quality Assurance Audit Samples. Arsenic samples prepared by the Environmental Protection Agency's (EPA) Environmental Systems Laboratory, Quality Assurance Division, Source Branch, Mail Drop 77A, Research Triangle Park, North Carolina 27711. Each set will consist of two vials of unknown concentrations. Only when making compliance determinations, obtain an audit sample set from the Quality Assurance Management Office at each EPA regional office or the responsible enforcement office. (NOTE: The tester should notify the Quality Assurance Office or the responsible enforcement agency at least 30 days prior to the test date to allow sufficient time for delivery.)

### 4. Procedure

4.1 Sample Collection. A sample that is representative of the ore lot to be tested must be taken prior to analysis. The sample must be ground into a finely pulverized state. (A portion of the samples routinely collected for metals analysis may be used provided the sample is representative of the ore being tested.)

4.2 Sample Preparation. Weigh 50 to 500 mg of finely pulverized sample to the nearest 0.1 mg. Transfer the sample into the Teflon cup of the digestion bomb, and add 2 ml each of concentrated HNO<sub>3</sub> and HF. Seal the bomb immediately to prevent the loss of any volatile arsenic compounds that may form. Heat in an oven 105° C for 2 hours. Then remove the bomb from the oven and allow it to cool. Using a Teflon filter, quantitatively filter the digested sample into a 50-ml polypropylene volumetric flask. Rinse the bomb three times with small portions of 0.5 N HNO<sub>3</sub>, and filter the rinses into the flask. Add 5 ml of KCl solution to the flask, and dilute to 50 ml with 0.5 N HNO<sub>3</sub>.

4.3 Spectrophotometer Preparation. Turn on the power; set the wavelength, slit width, and lamp current; and adjust the background corrector as instructed by the manufacturer's manual for the particular atomic absorption spectrophotometer. Adjust the burner and flame characteristics as necessary.

4.4 Preparation of Standard Solutions. Pipet 1, 5, 10, and 25 ml of the stock As solution into separate 100-ml volumetric flasks. Add 10 ml KCl solution and dilute to the mark with 0.5 N HNO<sub>3</sub>. This will give standard concentrations of 10, 50, 100, and 250 µg As/ml. For low-level-arsenic samples that require the use of a graphite furnace or vapor generator, follow the procedures in Section 4.4.1.

Dilute 10 ml of KCl solution to 100 ml with 0.5 N HNO<sub>3</sub> and use as a reagent blank. Measure the standard absorbances against the reagent blank. Check these absorbances frequently against the blank during the analysis to assure that baseline drift has not occurred.

Prepare a standard curve of absorbance versus concentration. (Note: For instruments equipped with direct concentration readout devices, preparation of a standard curve will not be necessary.) In all cases follow calibration and operational procedures in the manufacturer's instruction manual. Maintain a laboratory log of all calibrations.

4.4.1 Arsenic Determination at Low Concentration. The lower limit of flame atomic absorption spectrophotometry is 10 µg As/ml. If the arsenic concentration of any sample is at a lower level, use the vapor generator or graphite furnace which is available as an accessory component. Follow the manufacturer's instructions in the use of such equipment.

4.4.1.1 Vapor Generator Procedure. Place a sample containing between 0 and 5 µg of arsenic in the reaction tube, and dilute to 15 ml with water. Since there is some trial and error involved in this procedure, it may be necessary to screen the samples by conventional atomic absorption until an approximate concentration is determined. After determining the approximate concentration, adjust the volume of the sample accordingly. Pipet 15 ml of concentrated HCl into each tube. Add 1 ml of 30 percent KI solution. Place the reaction tube into a 50° C water bath for 5 minutes. Cool to room temperature. Connect the reaction tube to the vapor generator assembly. When the instrument response has returned to baseline, inject 5.0 ml of 5 percent NaBH<sub>4</sub> and integrate the resulting spectrophotometer signal over a 30-second time period.

4.4.1.2 Graphite Furnace Procedure. Pipet 5 ml of this digested solution into a 10-ml volumetric flask. Add 1 ml of the 1 percent nickel nitrate solution, 0.5 ml of 50 percent HNO<sub>3</sub>, and 1 ml of the 3 percent hydrogen peroxide and dilute to 10 ml with water. The sample is now ready to inject in the furnace for analysis.

Because instruments from different manufacturers are different, no detailed operating instructions are given here. Instead, the analyst should follow the instructions provided with the particular instrument.

4.5 Analysis.

4.5.1 Arsenic Determination. Determine the absorbance of each sample using the blank as a reference. If the sample concentration falls outside the range of the calibration curve, make an appropriate dilution with 0.5 N HNO<sub>3</sub> so that the final concentration falls within the range of the curve. From the curve, determine the As concentration in each sample.

4.5.2 Mandatory Check for Matrix Effects on the Arsenic Results. Same as in Method 12, Section 5.4.2.

4.5.3 Audit analysis. With each set or sets of source compliance samples, analyze the two unknown audit samples in the same manner as the source samples to evaluate the techniques of the analyst and the standards preparation. The same analyst, analytical reagents, and analytical system shall be used both for each set or sets of compliance samples and the EPA audit samples; if this condition is met, it is not necessary to analyze additional audit samples for subsequent compliance analyses performed for the same enforcement agency within a 30-day period. An audit sample set may not be used to validate different sets of compliance samples under the jurisdiction of different enforcement agencies unless prior arrangements are made with both enforcement agencies.

Calculate the concentration in g/m<sup>3</sup> using the specified sample volume in the audit instructions. (Note: The acceptability of the analyses of the audit samples may be obtained immediately by reporting the audit and compliance results by telephone). Include the results of both audit samples, their identification numbers, and the analysts' names with the results of the compliance determination samples in appropriate reports to the EPA regional office or the appropriate enforcement agency. Include this information with subsequent compliance analyses for the same enforcement agency during the succeeding 30-day period.

#### 5. Calculations

5.1 Calculate the percent arsenic in the ore sample as follows:

$$\% \text{ AS} = \frac{5 C_a F_d}{W} \quad \text{Eq. 108A-1}$$

Where:

C<sub>a</sub>=Concentration of As as read from the standard curve, µg/ml.

F<sub>d</sub>=Dilution factor (equals 1 if the sample has not been diluted).

W=Weight of ore sample analyzed, mg.

5=(50 ml sample×100)/(10<sup>3</sup> µg/mg).

#### 6. Bibliography

1. Same as Citations 1 through 9 of Section 7, of Method 5.

2. Perkin Elmer Corporation. Analytical methods of Atomic Absorption Spectrophotometry. 303-0152. Norwalk, Connecticut. September 1976. pp 5-6.

3. Ringwald, D. (TRW). Arsenic Determination on Process Materials from ASARCO's Copper Smelter in Tacoma, Washington. Unpublished Report. Prepared for Emission Measurement Branch, Emission Standards and Engineering Division, U.S. Environmental Protection Agency, Research Triangle Park, North Carolina 27711. August 1980. 35 p.

#### METHOD 108B—DETERMINATION OF ARSENIC CONTENT IN ORE SAMPLES FROM NON-FERROUS SMELTERS

##### 1. *Applicability and Principle*

1.1 *Applicability.* This method applies to the determination of inorganic arsenic (As) content of process ore and reverberatory matte samples from nonferrous smelters and other sources as specified in the regulations. Samples resulting in an analytical concentration greater than 10 µg As/ml may be analyzed by this method.

1.2 *Principle.* Arsenic bound in ore samples is liberated by acid digestion and analyzed by flame atomic absorption spectrophotometry.

##### 2. *Apparatus*

2.1 *Sample Preparation.*

2.2.1 Teflon Beakers. 150-ml.

2.1.2 Graduated Pipets. 5-ml disposable.

2.1.3 Graduated Cylinder. 50-ml.

2.1.4 Volumetric Flask. 100-ml.

2.1.5 Analytical Balance. To measure within 0.1 mg.

2.1.6 Hot Plate.

2.1.7 Perchloric Acid Fume Hood.

2.2 *Analysis.*

2.2.1 Spectrophotometer. Equipped with an electrodeless discharge lamp and a background corrector to measure absorbance at 193.7 mm.

2.2.2 Beaker and Watch Glass. 400-ml.

2.2.3 Volumetric Flask. 1-liter.

2.2.4 Volumetric Pipets. 1-, 5-, 10-, and 25-ml.

##### 3. *Reagents*

Unless otherwise specified, use American Chemical Society (ACS) reagent grade (or equivalent) chemicals throughout.

3.1 *Sample Preparation.*

3.1.1 Water. Deionized distilled to meet American Society for Testing and Materials Specification D 1193-74, Type 3 (incorporated by reference—see §61.18).

3.1.2 Nitric Acid (HNO<sub>3</sub>). Concentrated. HANDLE WITH CAUTION.

3.1.3 Hydrofluoric Acid (HF). Concentrated. HANDLE WITH CAUTION.

3.1.4 Perchloric Acid (HClO<sub>4</sub>). 70 Percent. HANDLE WITH CAUTION.

NOTE: Because of its caustic, hygroscopic, and deflagrating nature, use extreme care in handling HClO<sub>4</sub>. Keep separate from water and oxidizable materials to prevent vigorous evolution of heat, spontaneous combustion, or explosion. Heat solutions containing HClO<sub>4</sub> only in hoods specifically designed for HClO<sub>4</sub>.

3.1.5 Hydrochloric Acid (HCl). Concentrated. HANDLE WITH CAUTION.

3.2 *Analysis.*

3.2.1 Water. Same as in Section 3.1.1.

3.2.2 Stock Arsenic Standard, 1.0 mg As/ml. Dissolve 1.3203 g of primary grade As<sub>2</sub>O<sub>3</sub> (dried at 105°C) in a 400-ml beaker with 10 ml of HNO<sub>3</sub> and 5 ml HCl. Cover with a watch glass and heat gently until dissolution is complete. Add 10 ml of HNO<sub>3</sub> and 25 ml of HClO<sub>4</sub>, evaporate to strong fumes of HClO<sub>4</sub> and reduce to about 20 ml volume. Cool, add 100 ml of water and 100 ml of HCl, and transfer quantitatively to a 1-liter volumetric flask. Dilute to volume with water and mix.

3.2.3 Acetylene. Suitable quality for atomic absorption analysis.

3.2.4 Air. Suitable quality for atomic absorption analysis.

3.2.5 Quality Assurance Audit Samples. Same as in Method 108A, Section 3.2.8.

##### 4. *Procedure*

4.1 *Sample Collection.* Same as in Method 108A, Section 4.1.

4.2 *Sample Preparation.* Weigh 100 to 1000 mg of finely pulverized sample to the nearest 0.1 mg. Transfer the sample to a 150-ml Teflon beaker. Dissolve the sample by adding 15 ml of HNO<sub>3</sub>, 10 ml of HCl, 10 ml of HF, and 10 ml of HClO<sub>4</sub> in the exact order as described, and let stand for 10 minutes. In a HClO<sub>4</sub> fume hood, heat on a hot plate until 2-3 ml of HClO<sub>4</sub> remain, then cool. Add 20 ml of water and 10 ml of HCl. Cover and warm until the soluble salts are in solution. Cool, and transfer quantitatively to 100-ml volumetric flask. Dilute to the mark with water.

4.3 *Spectrophotometer Preparation.* Same as in Method 108A, Section 4.3.

4.4 *Preparation of Standard Solutions.*

4.4.1 Pipet 1, 5, 10, and 25 ml of the stock As solution into separate 100-ml flasks. Add 2 ml of HClO<sub>4</sub>, 10 ml of HCl, and dilute to the mark with water. This will provide standard concentrations of 10, 50, 100, and 250 µg As/ml. For lower level arsenic samples, use Method 108C.

4.4.2 Measure the standard absorbances against the reagent blank. Check these absorbances frequently against the blank during the analysis to ensure that baseline drift has not occurred.

4.4.3 Prepare a standard curve of absorbance versus concentration.

NOTE.—For instruments equipped with direct concentration readout devices, preparation of a standard curve will not be necessary. In all cases, follow calibration and

operational procedures in the manufacturer's instruction manual. Maintain a laboratory log of all calibrations.

#### 4.5 Analysis.

4.5.1 Arsenic Determination. Determine the absorbance of each sample using the blank as a reference. If the sample concentration falls outside the range of the calibration curve, make an appropriate dilution with 2 percent HClO<sub>4</sub>/10 percent HCl (prepared by diluting 2 ml concentrated HClO<sub>4</sub> and 10 ml concentrated HCl to 100 ml with water) so that the final concentration falls within the range of the curve. From the curve, determine the As concentration in each sample.

4.5.2 Mandatory Check for Matrix Effects on the Arsenic Results. Same as in Method 12, Section 5.4.2, 40 CFR part 60.

4.5.3 Audit Analysis. Same as in Method 108A, Section 4.5.3.

#### 5. Calculations

Same as in Method 108A, Section 5.

#### 6. Bibliography

Same as in Method 108A, Section 6.

### METHOD 108C—DETERMINATION OF ARSENIC CONTENT IN ORE SAMPLES FROM NON-FERROUS SMELTERS

#### 1. Applicability and Principle

1.1 Applicability. This method applies to the determination of inorganic arsenic (As)

content of process ore and reverberatory matte samples from nonferrous smelters and other sources as specified in the regulations. This method is applicable to samples having an analytical concentration less than 10 µg As/ml.

1.2 Principle. Arsenic bound in ore samples is liberated by acid digestion and analyzed by the molybdenum blue photometric procedure.

#### 2. Apparatus

##### 2.1 Sample Preparation and Distillation.

2.1.1 Analytical Balance. To measure to within 0.1 mg.

2.1.2 Erlenmeyer Flask. 300-ml.

2.1.3 Hot Plate.

2.1.4 Distillation Apparatus. No. 6, American Society for Testing and Materials (ASTM) E50, reapproved 1986 (incorporated by reference—see §60.18); detailed in Figure 108C-1.

2.1.5 Graduated Cylinder. .50-ml.

2.1.6 Perchloric Acid Fume Hood.

##### 2.2 Analysis.

2.2.1 Photometer. Capable of measuring at 660 nm.

2.2.2 Volumetric Flasks. 50- and 100-ml.

#### 3. Reagents

Unless otherwise specified, use ACS reagent grade (or equivalent chemicals) throughout.

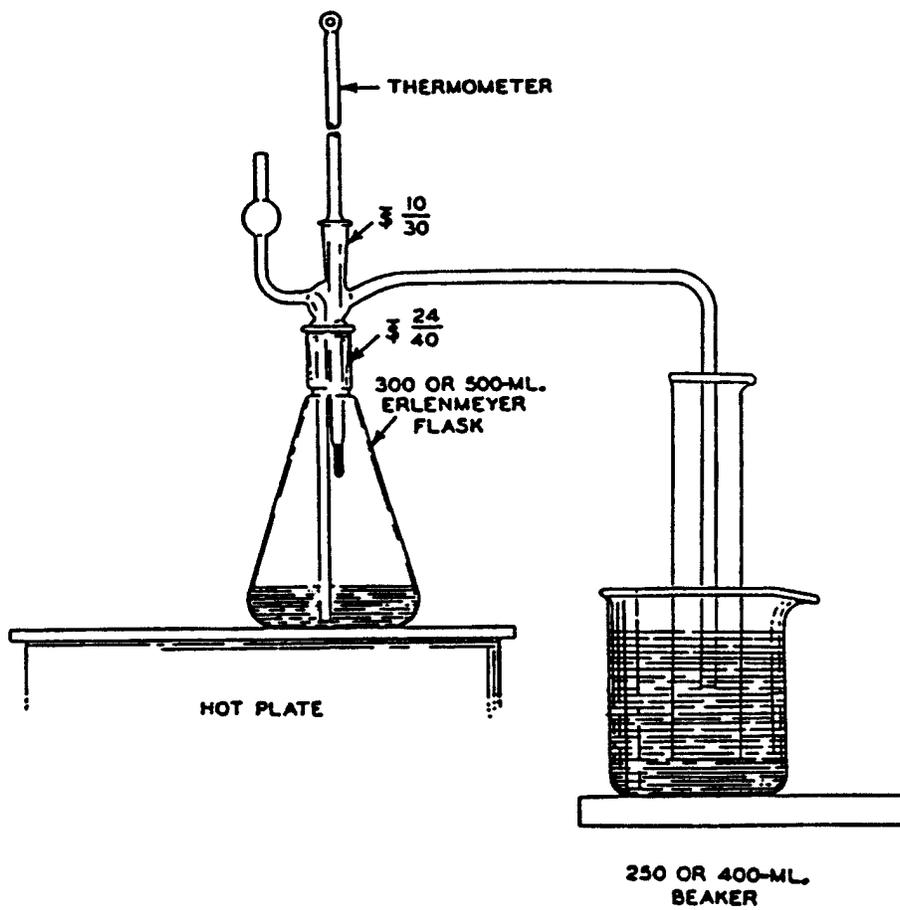


Figure 108C-1. Distillation apparatus.

**3.1 Sample Preparation.**

3.1.1 Water. Deionized distilled to meet ASTM Specification D 1193-74, Type 3 (incorporated by reference—see §61.18). When high concentrations of organic matter are not expected to be present, the analyst may omit the  $\text{KMnO}_4$  test for oxidizable organic matter.

3.1.2 Nitric Acid ( $\text{HNO}_3$ ), Concentrated. HANDLE WITH CAUTION.

3.1.3 Hydrofluoric Acid (HF), Concentrated. HANDLE WITH CAUTION.

3.1.4 Sulfuric Acid ( $\text{H}_2\text{SO}_4$ ), Concentrated. HANDLE WITH CAUTION.

3.1.5 Perchloric Acid ( $\text{HClO}_4$ ), 70 Percent. HANDLE WITH CAUTION.

NOTE.—Because of its caustic, hygroscopic, and deflagrating nature, use extreme care in handling  $\text{HClO}_4$ . Keep separate from water and oxidizable materials to prevent vigorous evolution of heat, spontaneous combustion, or explosion. Heat solutions containing  $\text{HClO}_4$  only in hoods specifically designed for  $\text{HClO}_4$ .

3.1.6 Hydrochloric Acid (HCl), Concentrated. HANDLE WITH CAUTION.

3.1.7 Dilute Hydrochloric Acid. Add one part concentration HCl to nine parts water.

3.1.8 Hydrazine Sulfate [ $(\text{NH}_2)_2\text{H}_2\text{SO}_4$ ].

3.1.9 Potassium Bromide (KBr).

3.1.10 Bromine Water, Saturated.

**3.2 Analysis.**

3.2.1 Water. Same as in Section 3.1.1.

3.2.2 Methyl Orange Solution, 1 g/liter.

3.2.3 Ammonium Molybdate Solution, 5 g/liter. Dissolve 0.5 g  $(\text{NH}_4)_2\text{Mo}_7\text{O}_{24}\cdot 4\text{H}_2\text{O}$  in water in a 100-ml volumetric flask, and dilute to the mark. This solution shall be freshly prepared.

3.2.4 Standard Arsenic Solution, 10  $\mu\text{g}$  As/ml. Dissolve 0.1320 g of  $\text{As}_2\text{O}_3$  in 100 ml HCl in a 1-liter volumetric flask. Add 200 ml of water, cool, dilute to the mark with water, and mix. Transfer 100 ml of this solution to a 1-liter volumetric flask, add 40 ml HCl, cool, dilute to the mark, and mix.

3.2.5 Hydrazine Sulfate Solution, 1 g/liter. Dissolve 0.1 g of  $(\text{NH}_2)_2\text{H}_2\text{SO}_4$  in water, and dilute to 100 ml in a volumetric flask. This solution shall be freshly prepared.

3.2.6 Potassium Bromate ( $\text{KBrO}_3$ ) Solution, 0.03 Percent. Dissolve 0.3 g  $\text{KBrO}_3$  in water, and dilute to 1 liter with water.

3.2.7 Ammonium Hydroxide ( $\text{NH}_4\text{OH}$ ), Concentrated.

3.2.8 Boiling Granules.

3.2.9 1/1 HCl/Water. Dilute equal parts concentrated HCl with water.

3.2.10 Quality Assurance Audit Samples. Same as in Method 108A, Section 3.2.8.

**4. Procedure****4.1 Sample Preparation and Distillation.**

4.1.1 Weigh 1.0 g of finely pulverized sample to the nearest 0.1 mg. Transfer the sample to a 300-ml Erlenmeyer flask and add 15 ml of  $\text{HNO}_3$ , 4 ml HCl, 2 ml HF, 3 ml  $\text{HClO}_4$ ,

and 15 ml  $\text{H}_2\text{SO}_4$ . In a  $\text{HClO}_4$  fume hood, heat on a hot plate to decompose the sample. Then heat while swirling over an open flame until dense, white fumes evolve. Cool, add 15 ml of water, swirl to hydrate the  $\text{H}_2\text{SO}_4$  completely, and add several boiling granules. Cool to room temperature.

4.1.2 Add 1 g of KBr, 1 g hydrazine sulfate, and 50 ml HCl. Immediately attach the distillation head with thermometer and dip the side arm into a 50-ml graduated cylinder containing 25 ml of water and 2 ml of bromine water. Keep the graduated cylinder immersed in a beaker of cold water during distillation. Distill until the temperature of the vapor in the flask reaches 107°C. When distillation is complete, remove the flask from the hot plate, and simultaneously wash down the side arm with water as it is removed from the cylinder.

4.1.3 If the expected arsenic content is in the range of 0.0020 to 0.10 percent, dilute the distillate to the 50-ml mark of the cylinder with water, stopper, and mix. Transfer a 5.0-ml aliquot to a 50-ml volumetric flask. Add 10 ml of water and a boiling granule. Place the flask on a hot plate, and heat gently until the bromine is expelled and the color of methyl orange indicator persists upon the addition of 1-2 drops. Cool the flask to room temperature. Neutralize just to the yellow color of the indicator with dropwise additions of  $\text{NH}_4\text{OH}$ . Bring back to the red color by dropwise addition of dilute HCl, and add 10 ml excess. Proceed with the molybdenum blue color development as described in section 4.2.

4.1.4 If the expected arsenic content is in the range of 0.0002 to 0.0010 percent As, transfer either the entire initial distillate or the measured remaining distillate from above to a 250-ml beaker. Wash the cylinder with two successive portions of concentrated  $\text{HNO}_3$ , adding each portion to the distillate in the beaker. Add 4 ml of concentrated  $\text{HClO}_4$ , a boiling granule, and cover with a flat watch glass placed slightly to one side. Boil gently on a hot plate until the volume is reduced to approximately 10 ml. Add 3 ml of  $\text{HNO}_3$ , and continue the evaporation until  $\text{HClO}_4$  is refluxing on the beaker cover. Cool briefly, rinse the underside of the watch glass and the inside of the beaker with about 3-5 ml of water, cover, and continue the evaporation to expel all but 2 ml of the  $\text{HClO}_4$ . NOTE: If the solution appears cloudy due to a small amount of antimony distilling over, add 4 ml of 1/1 HCl/water and 5 ml of water, cover, and warm gently until clear. If cloudiness persists, add 5 ml of  $\text{HNO}_3$  and 2 ml  $\text{H}_2\text{SO}_4$ . Continue the evaporation of the volatile acids to solubilize the antimony until dense white fumes of  $\text{H}_2\text{SO}_4$  appear. Retain at least 1 ml of the  $\text{H}_2\text{SO}_4$ . To the 2 ml of  $\text{HClO}_4$  solution or 1 ml of the  $\text{H}_2\text{SO}_4$  solution, add 15 ml of water, boil gently for 2 minutes, and then cool. Proceed with the molybdenum blue

color development by neutralizing the solution directly in the beaker just to the yellow indicator color by dropwise addition of  $\text{NH}_4\text{OH}$ . Just bring back the red color by dropwise addition of dilute HCl. Transfer the solution to a 50-ml volumetric flask, and rinse the beaker successively with 10 ml of dilute HCl, followed by several small portions of water. At this point the volume of solution in the flask should be no more than 40 ml. Continue with the color development as described in section 4.2.

#### 4.2 Analysis.

4.2.1 Add 1 ml of  $\text{KBrO}_3$  solution to the flask and heat on a low-temperature hot plate to about  $50^\circ\text{C}$  to oxidize the arsenic and methyl orange. Add 5.0 ml of ammonium molybdate solution to the warm solution and mix. Add 2.0 ml of hydrazine sulfate solution, dilute until the solution comes within the neck of the flask, and mix. Place in a 400-ml beaker, 80 percent full of boiling water, for 10 minutes. Enough heat must be supplied to prevent the water bath from cooling much below the boiling point upon inserting the volumetric flask. Remove the flask, cool to room temperature, dilute to the mark, and mix.

4.2.2 Transfer a suitable portion of the reference solution to an absorption cell, and adjust the photometer to the initial setting, using a light band centered at 660 nm. While maintaining this photometer adjustment, take the photometric readings of the calibration solutions followed by the samples.

4.3 Preparation of the Calibration Curve. Transfer 1.0, 2.0, 4.0, 8.0, 12.0, 16.0, and 20.0 ml of standard arsenic solution ( $10 \mu\text{g}/\text{ml}$ ) to each of the seven 50-ml volumetric flasks. Dilute to 20 ml with dilute HCl. Add one drop of methyl orange solution and neutralize to the yellow color with dropwise addition of  $\text{NH}_4\text{OH}$ . Just bring back to the red color by dropwise addition of dilute HCl, and add 10 ml in excess. Proceed with the color development as described in section 4.2. Plot the photometric readings of the calibration solutions against  $\mu\text{g As}$  per 50 ml of solution. From the curve, determine the As concentration in each sample.

4.4 Audit Analysis. Same as in Method 108A, section 4.5.3.

#### 5. Calculations

Same as in Method 108A, section 5.

#### 6. Bibliography

Ringwald, D. (TRW). Arsenic Determination on Process Materials from ASARCO's Copper Smelter in Tacoma, Washington. Unpublished Report. Prepared for the Emission Measurement Branch, Technical Support Division, U.S. Environmental Protection Agency, Research Triangle Park, North Carolina 27711. August 1980. 35 p.

#### METHOD 111—DETERMINATION OF POLONIUM-210 EMISSIONS FROM STATIONARY SOURCES

Performance of this method should not be attempted by persons unfamiliar with the use of equipment for measuring radioactive disintegration rates.

#### 1.0 Applicability and Principle

1.1 Applicability. This method is applicable to the determination of polonium-210 emissions in particulate samples collected in stack gases. Samples should be analyzed within 30 days of collection to minimize error due to growth of polonium-210 from any lead-210 present in the sample.

1.2 Principle A particulate sample is collected from stack gases as described in Method 5 of appendix A to 40 CFR part 60. The polonium-210 in the sample is put in solution, deposited on a metal disc, and the radioactive disintegration rate measured. Polonium in acid solution spontaneously deposits on surfaces of metals that are more electropositive than polonium. This principle is routinely used in the radiochemical analysis of polonium-210.

#### 2.0 Apparatus

2.1 Alpha spectrometry system consisting of a multichannel analyzer, biasing electronics, silicon surface barrier detector, vacuum pump and chamber.

2.2 Constant temperature bath at  $85^\circ\text{C}$ .

2.3 Polished silver discs, 3.8 cm diameter, 0.4 mm thick with a small hole near the edge.

2.4 Glass beakers, 400 ml, 150 ml.

2.5 Hot plate, electric.

2.6 Fume hood.

2.7 Teflon<sup>1</sup> beakers, 150 ml.

2.8 Magnetic stirrer.

2.9 Stirring bar.

2.10 Plastic or glass hooks to suspend plating discs.

2.11 Internal proportional counter for measuring alpha particles.

2.12 Nucleopore<sup>1</sup> filter membranes, 25 mm diameter, 0.2 micrometer pore size or equivalent.

2.13 Planchets, stainless steel, 32 mm diameter with 1.5 mm lip.

2.14 Transparent plastic tape, 2.5 cm wide with adhesive on both sides.

2.15 Epoxy spray enamel.

2.16 Suction filter apparatus for 25 mm diameter filter.

2.17 Wash bottles, 250 ml capacity.

2.18 Plastic graduated cylinder, 25 ml capacity.

#### 3.0 Reagents

3.1 Ascorbic acid, Reagent grade.

3.2 Ammonium hydroxide ( $\text{NH}_4\text{OH}$ ) 15 M, Reagent grade.

3.3 Distilled water meeting ASTM specifications for Type 3 Reagent Water. ASTM Test Method D 1193-77 (incorporated by reference-Section 61.18).

3.4 Ethanol (C<sub>2</sub>H<sub>5</sub>OH), 95 percent, Reagent grade.

3.5 Hydrochloric acid (HCl), 12 M, Reagent grade.

3.6 Hydrochloric acid, 1 M, dilute 83 ml of the 12 M Reagent grade HCl to 1 liter with distilled water.

3.7 Hydrofluoric acid (HF), 29 M, Reagent grade.

3.8 Hydrofluoric acid, 3 M, dilute 52 ml of the 29 M Reagent grade HF to 500 ml with distilled water. Use a plastic graduated cylinder and storage bottle.

3.9 Lanthanum carrier, 0.1 mg La<sup>+3</sup>/ml. Dissolve 0.078 gram Reagent grade lanthanum nitrate, La(NO<sub>3</sub>)<sub>3</sub>·6H<sub>2</sub>O in 250 ml of 1 M HCl.

3.10 Nitric acid (HNO<sub>3</sub>), 16 M, Reagent grade.

3.11 Perchloric acid (HClO<sub>4</sub>), 12 M, Reagent grade.

3.12 Polonium-209 solution.

3.13 Commercial silver cleaner.

3.14 Degreaser.

3.15 Standard solution of plutonium or americium.

3.16 Volumetric flask, 100 ml, 250 ml.

#### 4.0 Procedure

##### 4.1 Sample Preparation.

The glass fiber filter and acetone rinse from Method 5 of appendix A to 40 CFR part 60 are combined and dissolved as described below.

4.1.1 Add polonium-209 tracer to the acetone rinse in the glass beaker from Method 5 in an amount approximately equal to the amount of polonium-210 expected in the total particulate sample. Add 16 M nitric acid to the beaker to digest and loosen the residue.

4.1.2 Transfer the residue from the glass beaker to a teflon beaker containing the glass fiber filter. Rinse the glass beaker with 16 M nitric acid. If necessary reduce the volume in the beaker by evaporation until all of the nitric acid from the glass beaker has been transferred to the teflon beaker.

4.1.3 Add 30 ml of 29 M hydrofluoric acid to the teflon beaker and evaporate to near dryness on a hot plate in a properly operating hood. Caution: Do not allow the residue to go to dryness and overheat; this will result in loss of polonium.

4.1.4 Repeat step 4.1.3 until filter is dissolved.

4.1.5 Add 100 ml of 16 M nitric acid to the residue in the teflon beaker and evaporate to near dryness. Caution: Do not allow the residue to go to dryness.

4.1.6 Add 50 ml of 16 M nitric acid and 10 ml of 12 M perchloric acid to the teflon beaker

and heat until dense fumes of perchloric acid are evolved.

4.1.7 Repeat steps 4.1.3 to 4.1.6 as necessary until sample is completely dissolved.

4.1.8 Add 10 ml of 12 M hydrochloric acid and evaporate to dryness. Repeat additions and evaporations several times.

4.1.9 Transfer the sample to a 250 ml volumetric flask and dilute to volume with 3 M hydrochloric acid.

##### 4.2 Sample Screening.

The samples are checked for radioactivity levels to avoid contamination of the alpha spectrometry system. Use the following screening method:

4.2.1 Twenty ml of 1 M HCl are added to a 150 ml beaker.

4.2.2 One ml of the lanthanum carrier solution, 0.1 mg lanthanum per ml, is added to beaker.

4.2.3 A 1 ml aliquot of solution from Section 4.1.7 is added to the beaker.

4.2.4 Three ml of 15 M ammonium hydroxide are added to the beaker.

4.2.5 The solution from Section 4.2.4 is allowed to stand for a minimum of 30 minutes.

4.2.6 The solution is filtered through a filter membrane using suction.

4.2.7 The membrane is washed with 10 ml of distilled water and 5 ml of ethanol.

4.2.8 The membrane is allowed to air dry and then mounted, filtration side up, on a planchet lined with double-side plastic tape.

4.2.9 The membrane is radioassayed using an internal proportional alpha counter.

4.2.10 The activity of the original solution from Section 4.1.7 is calculated using Eq. 111-1.

$$P = \frac{250 C_S - C_B}{2.22 E_I A_L T} \quad \text{Eq. 111-1}$$

where:

P=total activity of original solution from Section 4.1.7, in pCi.

C<sub>S</sub>=total counts of screening sample.

C<sub>B</sub>=total counts of procedure background. (See 4.6).

E<sub>I</sub>=counting efficiency as determined in Section 8.0, counts per minute per disintegration per minute.

2.22=disintegrations per minute per picocurie.

A<sub>L</sub>=aliquot used in Section 4.2.3 in ml if different from 1 ml.

T=counting time in minutes for sample and background (which must be equal).

250=volume of solution from Section 4.1.7 in ml.

4.2.11 Determine the aliquot volume of solution from Section 4.1.7 to be analyzed for polonium-210 using results of the calculation described in Section 4.2.10. The aliquot used should contain an activity between 1 and 4 picocuries.

<sup>1</sup>Mention of registered trade names or specific products does not constitute endorsement by the Environmental Protection Agency.

$$A_S = \frac{250 \text{ (desired picocuries in aliquot)}}{P}$$

Eq. 111-2

A<sub>S</sub>=aliquot to be analyzed in ml.

P=total activity, as calculated with Eq. 111-1.

4.3 Preparation of Silver Disc for Spontaneous Electrodeposition.

4.3.1 Clean both sides of disc with a mild abrasive commercial silver cleaner.

4.3.2 Clean both sides of disc with degreaser.

4.3.3 Place disc on absorbent paper and spray one side with epoxy spray enamel. This should be carried out in a well-ventilated area, with the disc lying flat to keep paint on one side only.

4.3.4 Allow paint to dry for 24 hours before using disc for deposition.

4.4 Sample Analysis.

4.4.1 Add the aliquot of solution from Section 4.1.7 to be analyzed as determined in Section 4.2.11 to a suitable 200 ml container to be placed in a constant temperature bath. Note, aliquot volume may require a larger container.

4.4.2 If necessary, bring the volume to 100 ml with 1 M HCl. If the aliquot volume exceeds 100 ml, use total aliquot.

4.4.3 Add 200 mg of ascorbic acid and heat solution to 85 °C in a constant temperature bath.

4.4.4 Stirring of the solution must be maintained while the solution is in the constant temperature bath for plating.

4.4.5 Suspend a silver disc in the heated solution using a glass or plastic rod with a hook inserted through the hole in the disc. The disc should be totally immersed in the solution at all times.

4.4.6 Maintain the disc in solution for 3 hours while stirring.

4.4.7 Remove the silver disc, rinse with distilled water and allow to air dry at room temperature.

4.5 Measurement of Polonium-210

4.5.1 Place the silver disc, with deposition side (unpainted side) up, on a planchet and secure with double-side plastic tape.

4.5.2 Place the planchet with disc in alpha spectrometry system and count for 1000 minutes.

4.6 Determination of Procedure Background.

Background counts used in all equations are determined by performing the specific analysis required using the analytical reagents only. This should be repeated every 10 analyses.

4.7 Determination of Instrument Background.

Instrument backgrounds of the internal proportional counter and alpha spectrometry system should be determined on a weekly

basis. Instrument background should not exceed procedure background. If this occurs, it may be due to a malfunction or contamination.

## 5.0 Calculation of Polonium-210 Activity

5.1 Calculate the activity of polonium-210 on a sample filter using Eq. 111-3

$$A = \frac{C_T - C_B L}{2.22 E_Y E_C T D} \quad \text{Eq. 111-3}$$

where:

A=picocuries of polonium-210 in the particulate sample.

C<sub>T</sub>=total counts in polonium-210 spectral region.C<sub>B</sub>=procedure background counts in polonium-210 spectral region.

L=dilution factor. This is the volume in ml of solution in Section 4.1.7 (250 ml) divided by volume in ml used in Section 4.4.1.

2.22=disintegrations per minute per picocurie.

E<sub>Y</sub>=fraction of polonium recovered on the planchet. Given by:

$$E_Y = \frac{B_T - B_B}{2.22 F E_C T}$$

where:

B<sub>T</sub>=polonium-209 tracer counts in sample.B<sub>B</sub>=procedure background counts measured in polonium-209 spectral region.

F=activity in picocuries of polonium-209 added to sample—from Eq. 111-7.

2.22=disintegrations per minute per picocurie.

E<sub>C</sub>=counting efficiency of detector used, given by Eq. 111-6, as counts per minute per disintegration per minute.

T=counting time, specified in Sections 4.5.2 and 7.11 as 1000.minutes for all alpha spectrometry sample and background counts.

D=decay correction for time "t" (in days) from sample collection to sample counting, given by:  $D = e^{-0.005t}$ 

5.2 Procedure for Calculating Emission Rate in Curies per Metric Ton of Phosphate Rock Processed. Calculate the polonium-210 emission per metric ton of rock processed from each run at each stack using Equation 111-4. The emission rate from each stack is determined by averaging the emission rates calculated for each of the three runs at each stack.

$$R_S = \frac{1 \times 10^{-12} A Q_{SD}}{V_{SD} M_H} \quad \text{Eq. 111-4}$$

Where:

$R_s$ =emission rate from stack, in curies of polonium-210 per metric ton of rock processed.

$A$ =picocuries of polonium-210 in the particulate sample as determined by  $A$  in Eq. 111-3.

$Q_{SD}$ =volumetric flow rate of effluent stream in dry standard  $m^3/hr$  as determined by Method 2 of appendix A to 40 CFR part 60.

$V_{SD}$ =total volume of air sample in dry standard  $m^3$  as determined by Method 5 of appendix A to 40 CFR part 60.

$M_H$ =rock processing rate during sampling in metric tons/hr.

$1 \times 10^{-12}$ =curies per picocurie.

5.3 Average Stack Emission Rate Calculation. Determine the average stack emission rate from the average of the three emission rates calculated in section 5.2. Perform these calculations for each stack of each calciner.

5.4 Calciner Emission Rate Calculation. Determine each calciner's emission rate ( $X_i$ ) by taking the sum of the emission rates from all stacks of each calciner.

5.5 Annual Polonium-210 Emission Calculation. Determine the annual elemental phosphorus plant emissions of polonium-210 by taking the sum of emission rates at each calciner ( $X_i$  in 5.4) and multiplying this sum by the annual metric tons of phosphate rock processed by that calciner, according to Eq. 111-5.

$$S = X_1 M_1 + X_2 M_2 + \dots + X_N M_N$$

Eq. 111-5

Where:

$S$ =annual polonium-210 emissions in curies from the elemental phosphorus plant.

$X_i$ =emission rate from a calciner ( $i$ ) in curies per metric ton, as determined in section 5.4.

$N$ =number of calciners at the elemental phosphorus plant.

$M_i$ =phosphate rock processed per year, in metric tons for each calciner.

#### 6.0 Standardization of Alpha Spectrometry System

6.1 Obtain a standardized solution of an alpha-emitting actinide element such as plutonium-239 or americium-241. Add a quantity of the standardized solution to a 100 ml volumetric flask so that the final concentration when diluted to a volume of 100 ml will be approximately 1 pCi/ml. Add 10 ml of 16 M  $HNO_3$  and dilute to 100 ml with distilled water.

6.2 Add 20 ml of 1 M HCl to each of six 150 ml beakers.

6.3 Add 1.0 ml of lanthanum carrier, 0.1 mg lanthanum per ml, to the acid solution in each beaker.

6.4 Add 1.0 ml of actinide solution from section 6.1 to each beaker.

6.5 Add 5.0 ml of 3 M HF to each beaker.

6.6 Cover beakers and allow solutions to stand for a minimum of 30 minutes.

6.7 Filter each solution through a filter membrane using this suction filter apparatus.

6.8 After each filtration, wash the filter membrane with 10 ml of distilled water and 5 ml of ethanol.

6.9 Allow the filter membrane to air dry on the filter apparatus.

6.10 Carefully remove the filter membrane and mount with double-side tape on the inner surface of a planchet. Mount filter with filtration side up.

6.11 Place planchet in an alpha spectrometry system and count each planchet for 1000 minutes.

6.12 The counting efficiency of each detector can be calculated using Eq. 111-6.

$$E_c = \frac{C_s - C_B}{2.22 A_A T} \quad \text{Eq. 111-6}$$

where:

$C_s$ =gross counts in actinide peak.

$C_B$ =background counts in same peak area as  $C_s$ .

2.22=disintegrations per minute per picocurie.

$A_A$ =picocuries of actinide added.

$E_c$ =counting efficiency, counts per minute per disintegration per minute.

$T$ =counting time in minutes, specified in section 6.11 as 1000 minutes.

6.13 Determine the average counting efficiency for each detector by calculating the average of the six determinations.

#### 7.0 Preparation of Standardized Solution of Polonium-209

7.1 Obtain polonium-209 solution from an available supplier. Add a quantity of the Po-209 solution to a 100 ml volumetric flask so that the final concentration when diluted to a 100 ml volume will be approximately 1 pCi/ml. Add 10 ml of 16 M  $HNO_3$  and dilute to 100 ml with distilled water.

7.2 Add 20 ml of 1 M HCl to each of six 150 ml beakers.

7.3 Add 1.0 ml of lanthanum carrier, 0.1 mg lanthanum per ml, to the acid solution in each beaker.

7.4 Add 1.0 ml of polonium-209 tracer from section 7.1 to each beaker.

7.5 Add 3.0 ml of 15 M ammonium hydroxide to each beaker.

7.6 Cover beakers and allow to stand for a minimum of 30 minutes.

7.7 Filter the contents of each beaker through a separate filter membrane.

7.8 After each filtration, wash membrane with 10 ml of distilled water and 5 ml of ethanol.

7.9 Allow filter membrane to dry on filter apparatus.

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7.10 Carefully remove the filter membrane and mount with double-side tape on the inner surface of a planchet. Mount filter with filtration side up.

7.11 Place planchet in alpha spectrometry system and count each planchet for 1000 minutes.

7.12 The activity of the polonium solution can be calculated using Eq. 111-7.

$$F = \frac{C_S - C_B}{2.22 E_C T} \quad \text{Eq. 111-7}$$

where:

F=activity of polonium-209 solution, in pCi.

C<sub>S</sub>=gross counts of polonium-209 in the 4.88 MeV region of the spectrum in the counting time T.

C<sub>B</sub>=background counts in the 4.88 MeV region of spectrum the in the counting time T.

2.22=disintegrations per minute per picocurie.

E<sub>C</sub>=counting efficiency of detector used, counts per minute per disintegration per minute.

T=counting time, specified in section 7.11 as 1000 minutes.

7.13 Determine the average activity of the polonium-209 solution from the six determinations.

7.14 Aliquots of the solution from section 7.1 are to be used as tracer with each polonium-210 analysis.

### 8.0 Standardization of Internal Proportional Counter

8.1 Obtain a standardized solution of an alpha-emitting actinide element such as plutonium-239 or americium-241. Add a quantity of the standardized solution to a 100 ml volumetric flask so that the final concentration when diluted to a 100 ml volume will be approximately 100 pCi/ml. Add 10 ml of 16 M HNO<sub>3</sub> and dilute to 100 ml with distilled water.

8.2 Add 20 ml of 1 M HCl to each of six 150 ml beakers.

8.3 Add 1.0 ml of lanthanum carrier, 0.1 mg lanthanum per ml, to the acid solution in each beaker.

8.4 Add 1.0 ml of the actinide solution from section 8.1 to each beaker.

8.5 Add 5.0 ml of 3 M HF to each beaker.

8.6 Cover beakers and allow solutions to stand for a minimum of 30 minutes.

8.7 Filter each solution through a filter membrane using the suction filter apparatus.

8.8 After each filtration, wash membrane with 10 ml of distilled water and 5 ml of ethanol.

8.9 Allow filter membrane to dry on filter apparatus.

8.10 Carefully remove filter membrane and mount with double-side tape on the inner surface of a planchet. Mount filter with filtration side up.

8.11 Place planchet in internal proportional counter and count for 100 minutes.

8.12 The counting efficiency of the internal proportional counter is determined as follows from the six samples:

$$E_B = \frac{C_S - C_B}{2.22 A_A T} \quad \text{Eq. 111-8}$$

where:

E<sub>i</sub>=counting efficiency of proportional counter, counts per minute per disintegration per minute.

C<sub>S</sub>=gross counts of standard.

C<sub>B</sub>=gross counts of procedure background.

2.22=disintegrations per minute per picocurie.

A<sub>A</sub>=picocuries of actinide added.

T=counting time in minutes, specified in section 8.11 as 100 minutes.

8.13 Determine the average counting efficiency of the six determinations.

### 9.0 Quality Assurance

#### 9.1 General Requirements.

9.1.1 All analysts using this method are required to demonstrate their ability to use the method and to define their respective accuracy and precision criteria.

#### 9.2 Specific Requirements.

9.2.1 Each sample will be analyzed in duplicate.

9.2.2 Every tenth sample will be an externally prepared performance evaluation sample submitted by the Quality Assurance Officer.

9.2.3 Duplicate measurements are considered acceptable when the difference between them is less than two standard deviations as described in EPA 600/4-77-001 or subsequent revisions.

### METHOD 114—TEST METHODS FOR MEASURING RADIONUCLIDE EMISSIONS FROM STATIONARY SOURCES

#### 1. Purpose and Background

This method provides the requirements for: (1) Stack monitoring and sample collection methods appropriate for radionuclides; (2) radiochemical methods which are used in determining the amounts of radionuclides collected by the stack sampling and; (3) quality assurance methods which are conducted in conjunction with these measurements. These methods are appropriate for emissions for stationary sources. A list of references is provided.

Many different types of facilities release radionuclides into air. These radionuclides differ in the chemical and physical forms, half-lives and type of radiation emitted. The appropriate combination of sample extraction, collection and analysis for an individual radionuclide is dependent upon many interrelated factors including the mixture of

other radionuclides present. Because of this wide range of conditions, no single method for monitoring or sample collection and analysis of a radionuclide is applicable to all types of facilities. Therefore, a series of methods based on "principles of measurement" are described for monitoring and sample collection and analysis which are applicable to the measurement of radionuclides found in effluent streams at stationary sources. This approach provides the user with the flexibility to choose the most appropriate combination of monitoring and sample collection and analysis methods which are applicable to the effluent stream to be measured.

## 2. Stack Monitoring and Sample Collection Methods

Monitoring and sample collection methods are described based on "principles of monitoring and sample collection" which are applicable to the measurement of radionuclides from effluent streams at stationary sources. Radionuclides of most elements will be in the particulate form in these effluent streams and can be readily collected using a suitable filter media. Radionuclides of hydrogen, oxygen, carbon, nitrogen, the noble gases and in some circumstances iodine will be in the gaseous form. Radionuclides of these elements will require either the use of an in-line or off-line monitor to directly measure the radionuclides, or suitable sorbers, condensers or bubblers to collect the radionuclides.

2.1 Radionuclides as Particulates. The extracted effluent stream is passed through a filter media to remove the particulates. The filter must have a high efficiency for removal of sub-micron particles. The guidance in ANSI N13.1-1969 shall be followed in using filter media to collect particulates (incorporated by reference—see §61.18).

### 2.2 Radionuclides as Gases.

2.2.1 The Radionuclide Tritium (H-3). Tritium in the form of water vapor is collected from the extracted effluent sample by sorption, condensation or dissolution techniques. Appropriate collectors may include silica gel, molecular sieves, and ethylene glycol or water bubblers.

Tritium in the gaseous form may be measured directly in the sample stream using Method B-1, collected as a gas sample or may be oxidized using a metal catalyst to tritiated water and collected as described above.

2.2.2 Radionuclides of Iodine. Iodine is collected from an extracted sample by sorption or dissolution techniques. Appropriate collectors may include charcoal, impregnated charcoal, metal zeolite and caustic solutions.

2.2.3 Radionuclides of Argon, Krypton and Xenon. Radionuclides of these elements are either measured directly by an in-line or off-

line monitor, or are collected from the extracted sample by low temperature sorption techniques. Appropriate sorbers may include charcoal or metal zeolite.

2.2.4 Radionuclides of Oxygen, Carbon, Nitrogen and Radon. Radionuclides of these elements are measured directly using an in-line or off-line monitor. Radionuclides of carbon in the form of carbon dioxide may be collected by dissolution in caustic solutions.

### 2.3 Definition of Terms

*In-line monitor* means a continuous measurement system in which the detector is placed directly in or adjacent to the effluent stream. This may involve either gross radioactivity measurements or specific radionuclide measurements. Gross measurements shall be made in conformance with the conditions specified in Methods A-4, B-2 and G-4.

*Off-line monitor* means a measurement system in which the detector is used to continuously measure an extracted sample of the effluent stream. This may involve either gross radioactivity measurements or specific radionuclide measurements. Gross measurements shall be made in conformance with the conditions specified in Methods A-4, B-2 and G-4.

*Sample collection* means a procedure in which the radionuclides are removed from an extracted sample of the effluent using a collection media. These collection media include filters, absorbers, bubblers and condensers. The collected sample is analyzed using the methods described in Section 3.

## 3. Radionuclide Analysis Methods

A series of methods based on "principles of measurement" are described which are applicable to the analysis of radionuclides collected from airborne effluent streams at stationary sources. These methods are applicable only under the conditions stated and within the limitations described. Some methods specify that only a single radionuclide be present in the sample or the chemically separated sample. This condition should be interpreted to mean that no other radionuclides are present in quantities which would interfere with the measurement.

Also identified (Table 1) are methods for a selected list of radionuclides. The listed radionuclides are those which are most commonly used and which have the greatest potential for causing dose to members of the public. Use of methods based on principles of measurement other than those described in this section must be approved in advance of use by the Administrator. For radionuclides not listed in Table 1, any of the described methods may be used provided the user can demonstrate that the applicability conditions of the method have been met.

The type of method applicable to the analysis of a radionuclide is dependent upon the type of radiation emitted, i.e., alpha, beta or

gamma. Therefore, the methods described below are grouped according to principles of measurements for the analysis of alpha, beta and gamma emitting radionuclides.

### 3.1 Methods for Alpha Emitting Radionuclides

#### 3.1.1 Method A-1, Radiochemistry-Alpha Spectrometry.

*Principle:* The element of interest is separated from other elements, and from the sample matrix using radiochemical techniques. The procedure may involve precipitation, ion exchange, or solvent extraction. Carriers (elements chemically similar to the element of interest) may be used. The element is deposited on a planchet in a very thin film by electrodeposition or by coprecipitation on a very small amount of carrier, such as lanthanum fluoride. The deposited element is then counted with an alpha spectrometer. The activity of the nuclide of interest is measured by the number of alpha counts in the appropriate energy region. A correction for chemical yield and counting efficiency is made using a standardized radioactive nuclide (tracer) of the same element. If a radioactive tracer is not available for the element of interest, a predetermined chemical yield factor may be used.

*Applicability:* This method is applicable for determining the activity of any alpha-emitting radionuclide, regardless of what other radionuclides are present in the sample provided the chemical separation step produces a very thin sample and removes all other radionuclides which could interfere in the spectral region of interest. APHA-605(2), ASTM-D-3972(13).

#### 3.1.2 Method A-2, Radiochemistry-Alpha Counting.

*Principle:* The element of interest is separated from other elements, and from the sample matrix using radiochemistry. The procedure may involve precipitation, ion exchange, or solvent extraction. Carriers (elements chemically similar to the element of interest) may be used. The element is deposited on a planchet in a thin film and counted with an alpha counter. A correction for chemical yield (if necessary) is made. The alpha count rate measures the total activity of all emitting radionuclides of the separated element.

*Applicability:* This method is applicable for the measurement of any alpha-emitting radionuclide, provided no other alpha emitting radionuclide is present in the separated sample. It may also be applicable for determining compliance, when other radionuclides of the separated element are present, provided that the calculated emission rate is assigned to the radionuclide which could be present in the sample that has the highest dose conversion factor. IDO-12096(18).

#### 3.1.3 Method A-3, Direct Alpha Spectrometry.

*Principle:* The sample, collected on a suitable filter, is counted directly on an alpha spectrometer. The sample must be thin enough and collected on the surface of the filter so that any absorption of alpha particle energy in the sample or the filter, which would degrade the spectrum, is minimal.

*Applicability:* This method is applicable to simple mixtures of alpha emitting radionuclides and only when the amount of particulates collected on the filter paper are relatively small and the alpha spectra is adequately resolved. Resolutions should be 50 keV (FWHM) or better, ASTM-D-3084(16).

#### 3.1.4 Method A-4, Direct Alpha Counting (Gross alpha determination).

*Principle:* The sample, collected on a suitable filter, is counted with an alpha counter. The sample must be thin enough so that self-absorption is not significant and the filter must be of such a nature that the particles are retained on the surface.

*Applicability:* Gross alpha determinations may be used to measure emissions of specific radionuclides only (1) when it is known that the sample contains only a single radionuclide, or the identity and isotopic ratio of the radionuclides in the sample are well-known, and (2) measurements using either Method A-1, A-2 or A-5 have shown that this method provides a reasonably accurate measurement of the emission rate. Gross alpha measurements are applicable to unidentified mixtures of radionuclides only for the purposes and under the conditions described in section 3.7. APHA-601(3), ASTM-D-1943(10).

#### 3.1.5 Method A-5, Chemical Determination of Uranium.

*Principle:* Uranium may be measured chemically by either colorimetry or fluorometry. In both procedures, the sample is dissolved, the uranium is oxidized to the hexavalent form and extracted into a suitable solvent. Impurities are removed from the solvent layer. For colorimetry, dibenzoylmethane is added, and the uranium is measured by the absorbance in a colorimeter. For fluorometry, a portion of the solution is fused with a sodium fluoride-lithium fluoride flux and the uranium is determined by the ultraviolet activated fluorescence of the fused disk in a fluorometer.

*Applicability:* This method is applicable to the measurements of emission rates of uranium when the isotopic ratio of the uranium radionuclides is well known. ASTM-E-318(15), ASTM-D-2907(14).

#### 3.1.6 Method A-6, Radon-222—Continuous Gas Monitor.

*Principle:* Radon-222 is measured directly in a continuously extracted sample stream by passing the air stream through a calibrated scintillation cell. Prior to the scintillation

cell, the air stream is treated to remove particulates and excess moisture. The alpha particles from radon-222 and its decay products strike a zinc sulfide coating on the inside of the scintillation cell producing light pulses. The light pulses are detected by a photomultiplier tube which generates electrical pulses. These pulses are processed by the system electronics and the read out is in pCi/l of radon-222.

*Applicability:* This method is applicable to the measurement of radon-222 in effluent streams which do not contain significant quantities of radon-220. Users of this method should calibrate the monitor in a radon calibration chamber at least twice per year. The background of the monitor should also be checked periodically by operating the instrument in a low radon environment. EPA 520/1-89-009(24).

### 3.1.7 Method A-7, Radon-222-Alpha Track Detectors

*Principle:* Radon-222 is measured directly in the effluent stream using alpha track detectors (ATD). The alpha particles emitted by radon-222 and its decay products strike a small plastic strip and produce submicron damage tracks. The plastic strip is placed in a caustic solution that accentuates the damage tracks which are counted using a microscope or automatic counting system. The number of tracks per unit area is correlated to the radon concentration in air using a conversion factor derived from data generated in a radon calibration facility.

*Applicability:* Prior approval from EPA is required for use of this method. This method is only applicable to effluent streams which do not contain significant quantities of radon-220, unless special detectors are used to discriminate against radon-220. This method may be used only when ATDs have been demonstrated to produce data comparable to data obtained with Method A-6. Such data should be submitted to EPA when requesting approval for the use of this method. EPA 520/1-89-009(24).

### 3.2 Methods for Gaseous Beta Emitting Radionuclides.

#### 3.2.1 Method B-1, Direct Counting in Flow-Through Ionization Chambers.

*Principle:* An ionization chamber containing a specific volume of gas which flows at a given flow rate through the chamber is used. The sample (effluent stream sample) acts as the counting gas for the chamber. The activity of the radionuclide is determined from the current measured in the ionization chamber.

*Applicability:* This method is applicable for measuring the activity of a gaseous beta-emitting radionuclide in an effluent stream that is suitable as a counting gas, when no other beta-emitting nuclides are present. DOE/EP-0096(17), NCRP-58(23).

#### 3.2.2 Method B-2, Direct Counting With In-line or Off-line Beta Detectors.

*Principle:* The beta detector is placed directly in the effluent stream (in-line) or an extracted sample of the effluent stream is passed through a chamber containing a beta detector (off-line). The activities of the radionuclides present in the effluent stream are determined from the beta count rate, and a knowledge of the radionuclides present and the relationship of the gross beta count rate and the specific radionuclide concentration.

*Applicability:* This method is applicable only to radionuclides with maximum beta particle energies greater than 0.2 MeV. This method may be used to measure emissions of specific radionuclides only when it is known that the sample contains only a single radionuclide or the identity and isotopic ratio of the radionuclides in the effluent stream are well known. Specific radionuclide analysis of periodic grab samples may be used to identify the types and quantities of radionuclides present and to establish the relationship between specific radionuclide analyses and gross beta count rates.

This method is applicable to unidentified mixtures of gaseous radionuclides only for the purposes and under the conditions described in section 3.7.

### 3.3 Methods for Non-Gaseous Beta Emitting Radionuclides.

#### 3.3.1 Method B-3, Radiochemistry-Beta Counting.

*Principle:* The element of interest is separated from other elements, and from the sample matrix by radiochemistry. This may involve precipitation, distillation, ion exchange, or solvent extraction. Carriers (elements chemically similar to the element of interest) may be used. The element is deposited on a planchet, and counted with a beta counter. Corrections for chemical yield, and decay (if necessary) are made. The beta count rate determines the total activity of all radionuclides of the separated element. This method may also involve the radiochemical separation and counting of a daughter element, after a suitable period of ingrowth, in which case it is specific for the parent nuclide.

*Applicability:* This method is applicable for measuring the activity of any beta-emitting radionuclide, with a maximum energy greater than 0.2 MeV, provided no other radionuclide is present in the separated sample. APHA-608(5).

#### 3.3.2 Method B-4, Direct Beta Counting (Gross beta determination).

*Principle:* The sample, collected on a suitable filter, is counted with a beta counter. The sample must be thin enough so that self-absorption corrections can be made.

*Applicability:* Gross beta measurements are applicable only to radionuclides with maximum beta particle energies greater than 0.2 MeV. Gross beta measurements may be used to measure emissions of specific radionuclides only (1) when it is known that the

sample contains only a single radionuclide, and (2) measurements made using Method B-3 show reasonable agreement with the gross beta measurement. Gross beta measurements are applicable to mixtures of radionuclides only for the purposes and under the conditions described in section 3.7. APHA-602(4), ASTM-D-1890(11).

### 3.3.3 Method B-5, Liquid Scintillation Spectrometry.

*Principle:* An aliquot of a collected sample or the result of some other chemical separation or processing technique is added to a liquid scintillation "cocktail" which is viewed by photomultiplier tubes in a liquid scintillation spectrometer. The spectrometer is adjusted to establish a channel or "window" for the pulse energy appropriate to the nuclide of interest. The activity of the nuclide of interest is measured by the counting rate in the appropriate energy channel. Corrections are made for chemical yield where separations are made.

*Applicability:* This method is applicable to any beta-emitting nuclide when no other radionuclide is present in the sample or the separated sample provided that it can be incorporated in the scintillation cocktail. This method is also applicable for samples which contain more than one radionuclide but only when the energies of the beta particles are sufficiently separated so that they can be resolved by the spectrometer. This method is most applicable to the measurement of low-energy beta emitters such as tritium and carbon-14. APHA-609(6), EML-LV-539-17(19).

### 3.4 Gamma Emitting Radionuclides

#### 3.4.1 Method G-1, High Resolution Gamma Spectrometry.

*Principle:* The sample is counted with a high resolution gamma detector, usually either a Ge(Li) or a high purity Ge detector, connected to a multichannel analyzer or computer. The gamma emitting radionuclides in the sample are measured from the gamma count rates in the energy regions characteristic of the individual radionuclide. Corrections are made for counts contributed by other radionuclides to the spectral regions of the radionuclides of interest. Radiochemical separations may be made prior to counting but are usually not necessary.

*Applicability:* This method is applicable to the measurement of any gamma emitting radionuclide with gamma energies greater than 20 keV. It can be applied to complex mixtures of radionuclides. The samples counted may be in the form of particulate filters, absorbers, liquids or gases. The method may also be applied to the analysis of gaseous gamma emitting radionuclides directly in an effluent stream by passing the stream through a chamber or cell containing the detector. ASTM-3649(9), IDO-12096(18).

#### 3.4.2 Method G-2, Low Resolution Gamma Spectrometry.

*Principle:* The sample is counted with a low resolution gamma detector, a thallium activated sodium iodide crystal. The detector is coupled to a photomultiplier tube and connected to a multichannel analyzer. The gamma emitting radionuclides in the sample are measured from the gamma count rates in the energy regions characteristic of the individual radionuclides. Corrections are made for counts contributed by other radionuclides to the spectral regions of the radionuclides of interest. Radiochemical separation may be used prior to counting to obtain less complex gamma spectra if needed.

*Applicability:* This method is applicable to the measurement of gamma emitting radionuclides with energies greater than 100 keV. It can be applied only to relatively simple mixtures of gamma emitting radionuclides. The samples counted may be in the form of particulate filters, absorbers, liquids or gas. The method can be applied to the analysis of gaseous radionuclides directly in an effluent stream by passing the gas stream through a chamber or cell containing the detector. ASTM-D-2459(12), EMSL-LV-0539-17(19).

#### 3.4.3 Method G-3, Single Channel Gamma Spectrometry.

*Principle:* The sample is counted with a thallium activated sodium iodide crystal. The detector is coupled to a photomultiplier tube connected to a single channel analyzer. The activity of a gamma emitting radionuclide is determined from the gamma counts in the energy range for which the counter is set.

*Applicability:* This method is applicable to the measurement of a single gamma emitting radionuclide. It is not applicable to mixtures of radionuclides. The samples counted may be in the form of particulate filters, absorbers, liquids or gas. The method can be applied to the analysis of gaseous radionuclides directly in an effluent stream by passing the gas stream through a chamber or cell containing the detector.

#### 3.4.4 Method G-4, Gross Gamma Counting.

*Principle:* The sample is counted with a gamma detector usually a thallium activated sodium iodine crystal. The detector is coupled to a photomultiplier tube and gamma rays above a specific threshold energy level are counted.

*Applicability:* Gross gamma measurements may be used to measure emissions of specific radionuclides only when it is known that the sample contains a single radionuclide or the identity and isotopic ratio of the radionuclides in the effluent stream are well known. When gross gamma measurements are used to determine emissions of specific radionuclides periodic measurements using Methods G-1 or G-2 should be made to demonstrate that the gross gamma measurements provide reliable emission data. This method may be applied to analysis of gaseous radionuclides directly in an effluent

stream by placing the detector directly in or adjacent to the effluent stream or passing an extracted sample of the effluent stream through a chamber or cell containing the detector.

3.5 Counting Methods. All of the above methods with the exception of Method A-5 involve counting the radiation emitted by the radionuclide. Counting methods applicable to the measurement of alpha, beta and gamma radiations are listed below. The equipment needed and the counting principles involved are described in detail in ASTM-3648(8).

3.5.1 Alpha Counting:

- *Gas Flow Proportional Counters.* The alpha particles cause ionization in the counting gas and the resulting electrical pulses are counted. These counters may be windowless or have very thin windows.

- *Scintillation Counters.* The alpha particles transfer energy to a scintillator resulting in a production of light photons which strike a photomultiplier tube converting the light photons to electrical pulses which are counted. The counters may involve the use of solid scintillation materials such as zinc sulfide or liquid scintillation solutions.

- *Solid-State Counters.* Semiconductor materials, such as silicon surface-barrier p-n junctions, act as solid ionization chambers. The alpha particles interact with the detector producing electron hole pairs. The charged pair is collected by an applied electrical field and the resulting electrical pulses are counted.

- *Alpha Spectrometers.* Semiconductor detectors used in conjunction with multichannel analyzers for energy discrimination.

3.5.2 Beta Counting:

- *Ionization Chambers.* These chambers contain the beta-emitting nuclide in gaseous form. The ionization current produced is measured.

- *Geiger-Muller (GM) Counters-or Gas Flow Proportional Counters.* The beta particles cause ionization in the counting gas and the resulting electrical pulses are counted. Proportional gas flow counters which are heavily shielded by lead or other metal, and provided with an anti-coincidence shield to reject cosmic rays, are called low background beta counters.

- *Scintillation Counters.* The beta particles transfer energy to a scintillator resulting in a production of light photons, which strike a photomultiplier tube converting the light photon to electrical pulses which are counted. This may involve the use of anthracene crystals, plastic scintillator, or liquid scintillation solutions with organic phosphors.

- *Liquid Scintillation Spectrometers.* Liquid scintillation counters which use two photomultiplier tubes in coincidence to reduce background counts. This counter may also electronically discriminate among pulses of a given range of energy.

3.5.3 Gamma Counting:

- *Low-Resolution Gamma Spectrometers.* The gamma rays interact with thallium activated sodium iodide or cesium iodide crystal resulting in the release of light photons which strike a photomultiplier tube converting the light pulses to electrical pulses proportional to the energy of the gamma ray. Multi-channel analyzers are used to separate and store the pulses according to the energy absorbed in the crystal.

- *High-Resolution gamma Spectrometers.* Gamma rays interact with a lithium-drifted (Ge(Li)) or high-purity germanium (HPGe) semiconductor detectors resulting in a production of electron-hole pairs. The charged pair is collected by an applied electrical field. A very stable low noise preamplifier amplifies the pulses of electrical charge resulting from the gamma photon interactions. Multichannel analyzers or computers are used to separate and store the pulses according to the energy absorbed in the crystal.

- *Single Channel Analyzers.* Thallium activated sodium iodide crystals used with a single window analyzer. Pulses from the photomultiplier tubes are separated in a single predetermined energy range.

3.5.4 Calibration of Counters. Counters are calibrated for specific radionuclide measurements using a standard of the radionuclide under either identical or very similar conditions as the sample to be counted. For gamma spectrometers a series of standards covering the energy range of interest may be used to construct a calibration curve relating gamma energy to counting efficiency.

In those cases where a standard is not available for a radionuclide, counters may be calibrated using a standard with energy characteristics as similar as possible to the radionuclide to be measured. For gross alpha and beta measurements of the unidentified mixtures of radionuclides, alpha counters are calibrated with a natural uranium standard and beta counters with a cesium-137 standard. The standard must contain the same weight and distribution of solids as the samples, and be mounted in an identical manner. If the samples contain variable amounts of solids, calibration curves relating weight of solids present to counting efficiency are prepared. Standards other than those prescribed may be used provided it can be shown that such standards are more applicable to the radionuclide mixture measured.

3.6 Radiochemical Methods for Selected Radionuclides. Methods for a selected list of radionuclides are listed in Table 1. The radionuclides listed are those which are most commonly used and which have the greatest potential for causing doses to members of the public. For radionuclides not listed in Table 1, methods based on any of the applicable "principles of measurement" described in section 3.1 through 3.4 may be used.

3.7 Applicability of Gross Alpha and Beta Measurements to Unidentified Mixtures of Radionuclides. Gross alpha and beta measurements may be used as a screening measurement program to identify the need to do specific radionuclide analyses or to confirm or verify that unexpected radionuclides are not being released in significant quantities.

Gross alpha (Method A-4) or gross beta (Methods B-2 or B-4) measurements may also be used for the purpose of comparing the measured concentrations in the effluent stream with the limiting "Concentration Levels for Environmental Compliance" in table 2 of appendix E. For unidentified mixtures, the measured concentration value shall be compared with the lowest environmental concentration limit for any radionuclide which is not known to be absent from the effluent stream.

TABLE 1—LIST OF APPROVED METHODS FOR SPECIFIC RADIONUCLIDES

| Radionuclide           | Approved methods of analysis      |
|------------------------|-----------------------------------|
| Am-241                 | A-1, A-2, A-3, A-4                |
| Ar-41                  | B-1, B-2, G-1, G-2, G-3, G-4      |
| Ba-140                 | G-1, G-2, G-3, G-4                |
| Br-82                  | G-1, G-2, G-3, G-4                |
| C-11                   | B-1, B-2, G-1, G-2, G-3, G-4      |
| C-14                   | B-5                               |
| Ca-45                  | B-3, B-4, B-5                     |
| Ce-144                 | G-1, G-2, G-3, G-4                |
| Cm-244                 | A-1, A-2, A-3, A-4                |
| Co-60                  | G-1, G-2, G-3, G-4                |
| Cr-51                  | G-1, G-2, G-3, G-4                |
| Cs-134                 | G-1, G-2, G-3, G-4                |
| Cs-137                 | G-1, G-2, G-3, G-4                |
| Fe-55                  | B-5, G-1                          |
| Fe-59                  | G-1, G-2, G-3, G-4                |
| Ga-67                  | G-1, G-2, G-3, G-4                |
| H-3 (H <sub>2</sub> O) | B-5                               |
| H-3 (gas)              | B-1                               |
| I-123                  | G-1, G-2, G-3, G-4                |
| I-125                  | G-1                               |
| I-131                  | G-1, G-2, G-3, G-4                |
| In-113m                | G-1, G-2, G-3, G-4                |
| Ir-192                 | G-1, G-2, G-3, G-4                |
| Kr-85                  | B-1, B-2, B-5, G-1, G-2, G-3, G-4 |
| Kr-87                  | B-1, B-2, G-1, G-2, G-3, G-4      |
| Kr-88                  | B-1, B-2, G-1, G-2, G-3, G-4      |
| Mn-54                  | G-1, G-2, G-3, G-4                |
| Mo-99                  | G-1, G-2, G-3, G-4                |
| N-13                   | B-1, B-2, G-1, G-2, G-3, G-4      |
| O-15                   | B-1, B-2, G-1, G-2, G-3, G-4      |
| P-32                   | B-3, B-4, B-5                     |
| Pm-147                 | B-3, B-4, B-5                     |
| Po-210                 | A-1, A-2, A-3, A-4                |
| Pu-238                 | A-1, A-2, A-3, A-4                |
| Pu-239                 | A-1, A-2, A-3, A-4                |
| Pu-240                 | A-1, A-2, A-3, A-4                |
| Ra-226                 | A-1, A-2, G-1, G-2                |
| S-35                   | B-5                               |
| Se-75                  | G-1, G-2, G-3, G-4                |
| Sr-90                  | B-3, B-4, B-5                     |
| Tc-99                  | B-3, B-4, B-5                     |
| Te-201                 | G-1, G-2, G-3, G-4                |
| Uranium (total alpha)  | A-1, A-2, A-3, A-4                |
| Uranium (Isotopic)     | A-1, A-3                          |
| Uranium (Natural)      | A-5                               |

TABLE 1—LIST OF APPROVED METHODS FOR SPECIFIC RADIONUCLIDES—Continued

| Radionuclide | Approved methods of analysis |
|--------------|------------------------------|
| Xe-133       | G-1                          |
| Yb-169       | G-1, G-2, G-3, G-4           |
| Zn-65        | G-1, G-2, G-3, G-4           |

4. Quality Assurance Methods

Each facility required to measure their radionuclide emissions shall conduct a quality assurance program in conjunction with the radionuclide emission measurements. This program shall assure that the emission measurements are representative, and are of known precision and accuracy and shall include administrative controls to assure prompt response when emission measurements indicate unexpectedly large emissions. The program shall consist of a system of policies, organizational responsibilities, written procedures, data quality specifications, audits, corrective actions and reports. This quality assurance program shall include the following program elements:

4.1 The organizational structure, functional responsibilities, levels of authority and lines of communications for all activities related to the emissions measurement program shall be identified and documented.

4.2 Administrative controls shall be prescribed to ensure prompt response in the event that emission levels increase due to unplanned operations.

4.3 The sample collection and analysis procedures used in measuring the emissions shall be described including where applicable:

4.3.1 Identification of sampling sites and number of sampling points, including the rationale for site selections.

4.3.2 A description of sampling probes and representativeness of the samples.

4.3.3 A description of any continuous monitoring system used to measure emissions, including the sensitivity of the system, calibration procedures and frequency of calibration.

4.3.4 A description of the sample collection systems for each radionuclide measured, including frequency of collection, calibration procedures and frequency of calibration.

4.3.5 A description of the laboratory analysis procedures used for each radionuclide measured, including frequency of analysis, calibration procedures and frequency of calibration.

4.3.6 A description of the sample flow rate measurement systems or procedures, including calibration procedures and frequency of calibration.

4.3.7 A description of the effluent flow rate measurement procedures, including frequency of measurements, calibration procedures and frequency of calibration.

4.4 The objectives of the quality assurance program shall be documented and shall state the required precision, accuracy and completeness of the emission measurement data including a description of the procedures used to assess these parameters. Accuracy is the degree of agreement of a measurement with a true or known value. Precision is a measure of the agreement among individual measurements of the same parameters under similar conditions. Completeness is a measure of the amount of valid data obtained compared to the amount expected under normal conditions.

4.5 A quality control program shall be established to evaluate and track the quality of the emissions measurement data against preset criteria. The program should include where applicable a system of replicates, spiked samples, split samples, blanks and control charts. The number and frequency of such quality control checks shall be identified.

4.6 A sample tracking system shall be established to provide for positive identification of samples and data through all phases of the sample collection, analysis and reporting system. Sample handling and preservation procedures shall be established to maintain the integrity of samples during collection, storage and analysis.

4.7 Periodic internal and external audits shall be performed to monitor compliance with the quality assurance program. These audits shall be performed in accordance with written procedures and conducted by personnel who do not have responsibility for performing any of the operations being audited.

4.8 A corrective action program shall be established including criteria for when corrective action is needed, what corrective actions will be taken and who is responsible for taking the corrective action.

4.9 Periodic reports to responsible management shall be prepared on the performance of the emissions measurements program. These reports should include assessment of the quality of the data, results of audits and description of corrective actions.

4.10 The quality assurance program should be documented in a quality assurance project plan which should address each of the above requirements.

#### 5. References

(1) American National Standards Institute, "Guide to Sampling Airborne Radioactive Materials in Nuclear Facilities", ANSI-N13.1-1969, American National Standards Institute, New York, New York (1969).

(2) American Public Health Association, "Methods of Air Sampling", 2nd Edition, Method 605, "Tentative Method of Analysis for Plutonium Content of Atmospheric Particulate Matter". American Public Health Association, New York, NY (1977).

(3) Ibid, Method 601, "Tentative Method of Analysis for Gross Alpha Radioactivity Content of the Atmosphere".

(4) Ibid, Method 602, "Tentative Method of the Analysis for Gross Beta Radioactivity Content of the Atmosphere".

(5) Ibid, Method 608, "Tentative Method of Analysis for Strontium-90 Content of Atmospheric Particulate Matter".

(6) Ibid, Method 609, "Tentative Method of Analysis for Tritium Content of the Atmosphere".

(7) Ibid, Method 603, "Tentative Method of Analysis for Iodine-131 Content of the Atmosphere".

(8) American Society for Testing and Materials, 1986 Annual Book ASTM Standards, Designation D-3648-78, "Standard Practices for the Measurement of Radioactivity". American Society for Testing and Materials, Philadelphia, PA (1986).

(9) Ibid, Designation D-3649-85, "Standard Practice for High Resolution Gamma Spectrometry".

(10) Ibid, Designation D-1943-81, "Standard Test Method for Alpha Particle Radioactivity of Water".

(11) Ibid, Designation D-1890-81, "Standard Test Method for Beta Particle Radioactivity of Water".

(12) Ibid, Designation D-2459-72, "Standard Test Method for Gamma Spectrometry of Water".

(13) Ibid, Designation D-3972-82, "Standard Test Method for Isotopic Uranium in Water by Radiochemistry".

(14) Ibid, Designation D-2907-83, "Standard Test Methods for Microquantities of Uranium in Water by Fluorometry".

(15) Ibid, Designation E-318, "Standard Test Method for Uranium in Aqueous Solutions by Colorimetry".

(16) Ibid, Designation D-3084-75, "Standard Practice for Alpha Spectrometry of Water".

(17) Corley, J.P. and C.D. Corbit, "A Guide for Effluent Radiological Measurements at DOE Installations", DOE/EP-0096, Pacific Northwest Laboratories, Richland, Washington (1983).

(18) Department of Energy, "RESL Analytical Chemistry Branch Procedures Manual", IDO-12096, U.S. Department of Energy, Idaho Falls, Idaho (1982).

(19) Environmental Protection Agency, "Radiochemical Analytical Procedures for Analysis of Environmental Samples", EMSL-LV-0539-17, U.S. Environmental Protection Agency, Environmental Monitoring and Support Laboratory, Las Vegas, Nevada (1979).

(20) Environmental Protection Agency, "Radiochemistry Procedures Manual", EPA 520/5-84-006, Eastern Environmental Radiation Facility, Montgomery, Alabama (1984).

(21) National Council on Radiation Protection and Measurements, NCRP Report No. 50, "Environmental Radiation Measurements",

National Council on Radiation Protection and Measurement, Bethesda, Maryland (1976).

(22) Ibid, Report No. 47, "Tritium Measurement Techniques". (1976).

(23) Ibid, Report No. 58 "A Handbook of Radioactivity Measurement Procedures" (1985).

(24) Environmental Protection Agency, "Indoor Radon and Radon Decay Product Measurement Protocols", EPA 520/1-89-009, U.S. Environmental Protection Agency, Washington, DC (1989).

METHOD 115—MONITORING FOR RADON-222 EMISSIONS

This appendix describes the monitoring methods which must be used in determining the radon-222 emissions from underground uranium mines, uranium mill tailings piles, phosphogypsum stacks, and other piles of waste material emitting radon.

1. Radon-222 Emissions from Underground Uranium Mine Vents

1.1 Sampling Frequency and Calculation of Emissions. Radon-222 emissions from underground uranium mine vents shall be determined using one of the following methods:

1.1.1 Continuous Measurement. These measurements shall be made and the emissions calculated as follows:

(a) The radon-222 concentration shall be continuously measured at each mine vent whenever the mine ventilation system is operational.

(b) Each mine vent exhaust flow rate shall be measured at least 4 times per year.

(c) A weekly radon-222 emission rate for the mine shall be calculated and recorded weekly as follows:

$$A_w = C_1 Q_1 T_1 + C_2 Q_2 T_2 + \dots + C_i Q_i T_i$$

Where:

$A_w$ =Total radon-222 emitted from the mine during week (Ci)

$C_i$ =Average radon-222 concentration in mine vent i (Ci/m<sup>3</sup>)

$Q_i$ =Volumetric flow rate from mine vent i (m<sup>3</sup>/hr)

$T_i$ =Hours of mine ventilation system operation during week for mine vent i (hr)

(d) The annual radon-222 emission rate is the sum of the weekly emission rates during a calendar year.

1.1.2 Periodic Measurement. This method is applicable only to mines that continuously operate their ventilation system except for extended shutdowns. Mines which start up and shut down their ventilation system frequently must use the continuous measurement method describe in Section 1.1.1 above. Emission rates determined using periodic measurements shall be measured and calculated as follows:

(a) The radon-222 shall be continuously measured at each mine vent for at least one week every three months.

(b) Each mine vent exhaust flow rate shall be measured at least once during each of the radon-222 measurement periods.

(c) A weekly radon-222 emission rate shall be calculated for each weekly period according to the method described in Section 1.1.1. In this calculation T=168 hr.

(d) The annual radon-222 emission rate from the mine should be calculated as follows:

$$A_y = \frac{52 - W_s}{n} (A_{w1} + A_{w2} + \dots + A_{wi})$$

Where:

$A_y$ =Annual radon-222 emission rate from the mine (Ci)

$A_{wi}$ =Weekly radon-222 emission rate during the measurement period i (Ci)

$n$ =Number of weekly measurement periods per year

$W_s$ =Number of weeks during the year that the mine ventilation system is shut down in excess of 7 consecutive days, i.e. the sum of the number of weeks each shut down exceeds 7 days

1.2 Test Methods and Procedures

Each underground mine required to test its emissions, unless an equivalent or alternative method has been approved by the Administrator, shall use the following test methods:

1.2.1 Test Method 1 of appendix A to part 60 shall be used to determine velocity traverses. The sampling point in the duct shall be either the centroid of the cross section or the point of average velocity.

1.2.2 Test Method 2 of appendix A to part 60 shall be used to determine velocity and volumetric flow rates.

1.2.3 Test Methods A-6 or A-7 of appendix B, Method 114 to part 61 shall be used for the analysis of radon-222. Use of Method A-7 requires prior approval of EPA based on conditions described in appendix B.

1.2.4 A quality assurance program shall be conducted in conformance with the programs described for Continuous Radon Monitors and Alpha Track Detectors in EPA 520/1-89-009. (2)

2. Radon-222 Emissions from Uranium Mill Tailings Piles

2.1 Measurement and Calculation of Radon Flux from Uranium Mill Tailings Piles.

2.1.1 Frequency of Flux Measurement. A single set of radon flux measurements may be made, or if the owner or operator chooses, more frequent measurements may be made over a one year period. These measurements may involve quarterly, monthly or weekly intervals. All radon measurements shall be made as described in paragraphs 2.1.2 through 2.1.6 except that for measurements

made over a one year period, the requirement of paragraph 2.1.4(c) shall not apply. The mean radon flux from the pile shall be the arithmetic mean of the mean radon flux for each measurement period. The weather conditions, moisture content of the tailings and area of the pile covered by water existing at the time of the measurement shall be chosen so as to provide measurements representative of the long term radon flux from the pile and shall be subject to EPA review and approval.

2.1.2 Distribution of Flux Measurements. The distribution and number of radon flux measurements required on a pile will depend on clearly defined areas of the pile (called regions) that can have significantly different radon fluxes due to surface conditions. The mean radon flux shall be determined for each individual region of the pile. Regions that shall be considered for operating mill tailings piles are:

- (a) Water covered areas,
- (b) Water saturated areas (beaches),
- (c) Dry top surface areas, and
- (d) Sides, except where earthen material is used in dam construction.

For mill tailings after disposal the pile shall be considered to consist of only one region.

2.1.3 Number of Flux Measurements. Radon flux measurements shall be made within each region on the pile, except for those areas covered with water. Measurements shall be made at regularly spaced locations across the surface of the region, realizing that surface roughness will prohibit measurements in some areas of a region. The minimum number of flux measurements considered necessary to determine a representative mean radon flux value for each type of region on an operating pile is:

- (a) Water covered area—no measurements required as radon flux is assumed to be zero,
- (b) Water saturated beaches—100 radon flux measurements,
- (c) Loose and dry top surface—100 radon flux measurements,
- (d) Sides—100 radon flux measurements, except where earthen material is used in dam construction.

For a mill tailings pile after disposal which consists of only one region a minimum of 100 measurements are required.

2.1.4 Restrictions to Radon Flux Measurements. The following restrictions are placed on making radon flux measurements:

- (a) Measurements shall not be initiated within 24 hours of a rainfall.
- (b) If a rainfall occurs during the 24 hour measurements period, the measurement is invalid if the seal around the lip of the collector has washed away or if the collector is surrounded by water.

(c) Measurements shall not be performed if the ambient temperature is below 35°F or if the ground is frozen.

2.1.5 Areas of Pile Regions. The approximate area of each region of the pile shall be determined in units of square meters.

2.1.6 Radon Flux Measurement. Measuring radon flux involves the adsorption of radon on activated charcoal in a large-area collector. The radon collector is placed on the surface of the pile area to be measured and allowed to collect radon for a time period of 24 hours. The radon collected on the charcoal is measured by gamma-ray spectroscopy. The detailed measurement procedure provided in appendix A of EPA 520/5-85-0029(1) shall be used to measure the radon flux on uranium mill tailings, except the surface of the tailings shall not be penetrated by the lip of the radon collector as directed in the procedure, rather the collector shall be carefully positioned on a flat surface with soil or tailings used to seal the edge.

2.1.7 Calculations. The mean radon flux for each region of the pile and for the total pile shall be calculated and reported as follows:

- (a) The individual radon flux calculations shall be made as provided in appendix A EPA 86 (1). The mean radon flux for each region of the pile shall be calculated by summing all individual flux measurements for the region and dividing by the total number of flux measurements for the region.
- (b) The mean radon flux for the total uranium mill tailings pile shall be calculated as follows.

$$J_s = \frac{J_1A_1 + \dots + J_2A_2 \dots J_iA_i}{A_t}$$

Where:

$J_s$ =Mean flux for the total pile (pCi/m<sup>2</sup>-s)  
 $J_i$ =Mean flux measured in region i (pCi/m<sup>2</sup>-s)  
 $A_i$ =Area of region i (m<sup>2</sup>)  
 $A_t$ =Total area of the pile (m<sup>2</sup>)

2.1.8 Reporting. The results of individual flux measurements, the approximate locations on the pile, and the mean radon flux for each region and the mean radon flux for the total stack shall be included in the emission test report. Any condition or unusual event that occurred during the measurements that could significantly affect the results should be reported.

3.0 Radon-222 Emissions from Phosphogypsum Stacks.

3.1 Measurement and Calculation of the Mean Radon Flux. Radon flux measurements shall be made on phosphogypsum stacks as described below:

3.1.1 Frequency of Measurements. A single set of radon flux measurements may be

made after the phosphogypsum stack becomes inactive, or if the owner or operator chooses, more frequent measurements may be made over a one year period. These measurements may involve quarterly, monthly or weekly intervals. All radon measurements shall be made as described in paragraphs 3.1.2 through 3.1.6 except that for measurements made over a one year period, the requirement of paragraph 3.1.4(c) shall not apply. For measurements made over a one year period, the radon flux shall be the arithmetic mean of the mean radon flux for each measurement period.

3.1.2 Distribution and Number of Flux Measurements. The distribution and number of radon flux measurements required on a stack will depend on clearly defined areas of the stack (called regions) that can have significantly different radon fluxes due to surface conditions. The mean radon flux shall be determined for each individual region of the stack. Regions that shall be considered are:

- (a) Water covered areas,
- (b) Water saturated areas (beaches),
- (c) Loose and dry top surface areas,
- (d) Hard-packed roadways, and
- (e) Sides.

3.1.3 Number of Flux Measurements. Radon flux measurements shall be made within each region on the phosphogypsum stack, except for those areas covered with water. Measurements shall be made at regularly spaced locations across the surface of the region, realizing that surface roughness will prohibit measurements in some areas of a region. The minimum number of flux measurements considered necessary to determine a representative mean radon flux value for each type of region is:

- (a) Water covered area—no measurements required as radon flux is assumed to be zero,
- (b) Water saturated beaches—50 radon flux measurements,
- (c) Loose and dry top surface—100 radon flux measurements,
- (d) Hard-packed roadways—50 radon flux measurements, and
- (e) Sides—100 radon flux measurements.

A minimum of 300 measurements are required. A stack that has no water cover can be considered to consist of two regions, top and sides, and will require a minimum of only 200 measurements.

3.1.4 Restrictions to Radon Flux Measurements. The following restrictions are placed on making radon flux measurements:

- (a) Measurements shall not be initiated within 24 hours of a rainfall.
- (b) If a rainfall occurs during the 24 hour measurement period, the measurement is invalid if the seal around the lip of the collector has washed away or if the collector is surrounded by water.

(c) Measurements shall not be performed if the ambient temperature is below 35 °F or if the ground is frozen.

3.1.5 Areas of Stack Regions. The approximate area of each region of the stack shall be determined in units of square meters.

3.1.6 Radon Flux Measurements. Measuring radon flux involves the adsorption of radon on activated charcoal in a large-area collector. The radon collector is placed on the surface of the stack area to be measured and allowed to collect radon for a time period of 24 hours. The radon collected on the charcoal is measured by gamma-ray spectroscopy. The detailed measurement procedure provided in appendix A of EPA 520/5-85-0029(1) shall be used to measure the radon flux on phosphogypsum stacks, except the surface of the phosphogypsum shall not be penetrated by the lip of the radon collector as directed in the procedure, rather the collector shall be carefully positioned on a flat surface with soil or phosphogypsum used to seal the edge.

3.1.7 Calculations. The mean radon flux for each region of the phosphogypsum stack and for the total stack shall be calculated and reported as follows:

- (a) The individual radon flux calculations shall be made as provided in appendix A EPA 86 (1). The mean radon flux for each region of the stack shall be calculated by summing all individual flux measurements for the region and dividing by the total number of flux measurements for the region.
- (b) The mean radon flux for the total phosphogypsum stack shall be calculated as follows.

$$J_s = \frac{J_1 A_1 + J_2 A_2 + \dots + J_i A_i}{A_t}$$

Where:

$J_s$ =Mean flux for the total stack (pCi/m<sup>2</sup>-s)

$J_i$ =Mean flux measured in region i (pCi/m<sup>2</sup>-s)

$A_i$ =Area of region i (m<sup>2</sup>)

$A_t$ =Total area of the stack

3.1.8 Reporting. The results of individual flux measurements, the approximate locations on the stack, and the mean radon flux for each region and the mean radon flux for the total stack shall be included in the emission test report. Any condition or unusual event that occurred during the measurements that could significantly affect the results should be reported.

4.0 Quality Assurance Procedures for Measuring Rn-222 Flux

## A. Sampling Procedures

Records of field activities and laboratory measurements shall be maintained. The following information shall be recorded for each charcoal canister measurement:

- (a) Site
- (b) Name of pile
- (c) Sample location
- (d) Sample ID number
- (e) Date and time on
- (f) Date and time off
- (g) Observations of meteorological conditions and comments

Records shall include all applicable information associated with determining the sample measurement, calculations, observations, and comments.

## B. Sample Custody

Custodial control of all charcoal samples exposed in the field shall be maintained in accordance with EPA chain-of-custody field procedures. A control record shall document all custody changes that occur between the field and laboratory personnel.

## C. Calibration Procedures and Frequency

The radioactivity of two standard charcoal sources, each containing a carefully determined quantity of radium-226 uniformly distributed through 180g of activated charcoal, shall be measured. An efficiency factor is computed by dividing the average measured radioactivity of the two standard charcoal sources, minus the background, in cpm by the known radioactivity of the charcoal sources in dpm. The same two standard charcoal sources shall be counted at the beginning and at the end of each day's counting as a check of the radioactivity counting equipment. A background count using unexposed charcoal should also be made at the beginning and at the end of each counting day to check for inadvertent contamination of the detector or other changes affecting the background. The unexposed charcoal comprising the blank is changed with each new batch of charcoal used.

## D. Internal Quality Control Checks and Frequency

The charcoal from every tenth exposed canister shall be recounted. Five percent of the samples analyzed shall be either blanks (charcoal having no radioactivity added) or samples spiked with known quantities of radium-226.

## E. Data Precision, Accuracy, and Completeness

The precision, accuracy, and completeness of measurements and analyses shall be with-

in the following limits for samples measuring greater than 1.0 pCi/m<sup>2</sup>-s.

- (a) Precision: 10%
- (b) Accuracy: ±10%
- (c) Completeness: at least 85% of the measurements must yield useable results.

## 5.0 References

(1) Hartley, J.N. and Freeman, H.D., "Radon Flux Measurements on Gardiner and Royster phosphogypsum Piles Near Tampa and Mulberry, Florida," U.S. Environmental Protection Agency Report, EPA 520/5-85-029, January 1986.

(2) Environmental Protection Agency, "Indoor Radon and Radon Decay Product Measurement Protocols", EPA 520/1-89-009, U.S. Environmental Protection Agency, Washington, DC. (1989).

[38 FR 8826, Apr. 6, 1973]

EDITORIAL NOTE: For FEDERAL REGISTER citations to appendix B see the List of CFR Sections Affected appearing in the Finding Aids section of this volume.

## APPENDIX C TO PART 61—QUALITY ASSURANCE PROCEDURES

*Procedure 1—Determination of Adequate Chromatographic Peak Resolution*

In this method of dealing with resolution, the extent to which one chromatographic peak overlaps another is determined.

For convenience, consider the range of the elution curve of each compound as running from  $-2\sigma$  to  $+2\sigma$ . This range is used in other resolution criteria, and it contains 95.45 percent of the area of a normal curve. If two peaks are separated by a known distance,  $b$ , one can determine the fraction of the area of one curve that lies within the range of the other. The extent to which the elution curve of a contaminant compound overlaps the curve of a compound that is under analysis is found by integrating the contaminant curve over the limits  $b-2\sigma_s$  to  $b+2\sigma_s$ , where  $\sigma_s$  is the standard deviation of the sample curve.

This calculation can be simplified in several ways. Overlap can be determined for curves of unit area; then actual areas can be introduced. Desired integration can be resolved into two integrals of the normal distribution function for which there are convenient calculation programs and tables. An example would be Program 15 in Texas Instruments Program Manual ST1, 1975, Texas Instruments, Inc., Dallas, Texas 75222.

$$\frac{1}{\sqrt{2\pi}\sigma_c} \int_{b-2\sigma_s}^{b+2\sigma_s} e^{\left(\frac{-t^2}{2\sigma_c^2}\right)} dt = \frac{1}{\sqrt{2\pi}} \int_{\frac{b-2\sigma_s}{\sigma_c}}^{\infty} e^{\left(\frac{-x^2}{2}\right)} dx - \frac{1}{\sqrt{2\pi}} \int_{\frac{b+2\sigma_s}{\sigma_c}}^{\infty} e^{\left(\frac{-x^2}{2}\right)} dx$$

The following calculation steps are required:\*

1.  $2\sigma_s = t_s / \sqrt{2 \ln 2}$
2.  $\sigma_c = t_c / 2\sqrt{2 \ln 2}$
3.  $x_1 = (b - 2\sigma_s) / \sigma_c$
4.  $x_2 = (b + 2\sigma_s) / \sigma_c$
5.  $Q(x_1) = \frac{1}{\sqrt{2\pi}} \int_{x_1}^{\infty} e^{\left(\frac{-x^2}{2}\right)} dx$
6.  $Q(x_2) = \frac{1}{\sqrt{2\pi}} \int_{x_2}^{\infty} e^{\left(\frac{-x^2}{2}\right)} dx$
7.  $I_o = Q(x_1) - Q(x_2)$
8.  $A_o = I_o A_c / A_s$
9. Percentage overlap =  $A_o \times 100$  ,

where:

$A_s$  = Area of the sample peak of interest determined by electronic integration or by the formula  $A_s = h_s t_s$ .

$A_c$  = Area of the contaminant peak, determined in the same manner as  $A_s$ .

$b$  = Distance on the chromatographic chart that separates the maxima of the two peaks.

$H_s$  = Peak height of the sample compound of interest, measured from the average value of the baseline to the maximum of the curve.

$t_s$  = Width of sample peak of interest at 1/2 peak height.

$t_c$  = Width of the contaminant peak at 1/2 of peak height.

$\sigma_s$  = Standard deviation of the sample compound of interest elution curve.

$\sigma_c$  = Standard deviation of the contaminant elution curve.

$Q(x_1)$  = Integral of the normal distribution function from  $x_1$  to infinity.

$Q(x_2)$  = Integral of the normal distribution function from  $x_2$  to infinity.

$I_o$  = Overlap integral.

$A_o$  = Area overlap fraction.

\*In most instances,  $Q(x_2)$  is very small and may be neglected.



[47 FR 39178, Sept. 7, 1982]

APPENDIX D TO PART 61—METHODS FOR ESTIMATING RADIONUCLIDE EMISSIONS

1. Purpose and Background

Facility owners or operators may estimate radionuclide emissions to the atmosphere for dose calculations instead of measuring emissions. Particulate emissions from mill tailings piles should be estimated using the procedures listed in reference #2. All other emissions may be estimated by using the "Procedures" listed below, or using the method described in reference #1.

2. Procedure

To estimate emissions to the atmosphere:

(a) Determine the amount (in curies) used at facilities for the period under consideration. Radioactive materials in sealed pack-

ages that remain unopened, and have not leaked during the assessment period should not be included in the calculation.

(b) Multiply the amount used by the following factors which depend on the physical state of the radionuclide. They are:

- (i) 1 for gases;
- (ii)  $10^{-3}$  for liquids or particulate solids; and
- (iii)  $10^{-6}$  for solids.

If any nuclide is heated to a temperature of 100 degrees Celsius or more, boils at a temperature of 100 degrees Celsius or less, or is intentionally dispersed into the environment, it must be considered to be a gas.

(c) If a control device is installed between the place of use and the point of release, multiply emissions from (b) by an adjustment factor. These are presented in Table 1.

TABLE 1—ADJUSTMENT TO EMISSION FACTORS FOR EFFLUENT CONTROLS

| Controls   | Types of radionuclides controlled | Adjustment factor to emissions | Comments and conditions   |
|--|-----------------------------------|--------------------------------|---|
| HEPA filters .....                               | Particulates .....                | 0.01 .....                     | Not applicable to gaseous radionuclides; periodic testing is prudent to ensure high removal efficiency.                         |
| Fabric filter .....                              | Particulates .....                | 0.1 .....                      | Monitoring would be prudent to guard against tears in filter.   |
| Sintered metal .....                             | Particulates .....                | 1 .....                        | Insufficient data to make recommendation.   |
| Activated carbon filters ...                     | Iodine gas .....                  | 0.1 .....                      | Efficiency is time dependent; monitoring is necessary to ensure effectiveness.  |
| Douglas bags: Held one week or longer for decay. | Xenon .....                       | 0.5/wk .....                   | Based on xenon half-life of 5.3 days;   |
| Douglas bags: Released within one week.          | Xenon .....                       | 1 .....                        | Provides no reduction of exposure to general public.  |
| Venturi scrubbers .....                          | Particulates .....                | 0.05 .....                     | Although venturis may remove gases, variability in gaseous removal efficiency dictates adjustment factor for particulates only. |
|  | Gases .....                       | 1 .....                        |   |
| Packed bed scrubbers ....                        | Gases .....                       | 0.1 .....                      | Not applicable to particulates.   |
| Electrostatic precipitators                      | Particulates .....                | 0.05 .....                     | Not applicable for gaseous radionuclides  |
| Xenon traps .....                                | Xenon .....                       | 0.1 .....                      | Efficiency is time dependent; monitoring is necessary to ensure effectiveness.  |
| Fume hoods .....                                 | All .....                         | 1 .....                        | Provides no reduction to general public exposures.  |
| Vent stacks .....                                | All .....                         | 1 .....                        | Generally provides no reduction of exposure to general public.  |

References

(1) Environmental Protection Agency, "A Guide for Determining Compliance with the Clean Air Act Standards for Radionuclides Emissions from NRC-Licensed and Non-DOE Federal Facilities", EPA 520/1-89-002, January 1989.

(2) Nuclear Regulatory Commission, "Methods for Estimating Radioactive and Toxic Airborne Source Terms for Uranium Milling Operations", U.S. Nuclear Regu-

latory Commission Regulatory Guide 3.59, March 1987.

[54 FR 51711, Dec. 15, 1989]

APPENDIX E TO PART 61—COMPLIANCE PROCEDURES METHODS FOR DETERMINING COMPLIANCE WITH SUBPART I

1. Purpose and Background

This Appendix provides simplified procedures to reduce the burden on Nuclear Regulatory Commission (NRC) licensees, and non-

Department of Energy Federal facilities in determining compliance with 40 CFR part 61, subpart I. The procedures consist of a series of increasingly more stringent steps, depending on the facility's potential to exceed the standard.

First, a facility can be found in compliance if the quantity of radioactive material possessed during the year is less than that listed in a table of annual possession quantities. A facility will also be in compliance if the average annual radionuclide emission concentration is less than that listed in a table of air concentration levels. If the facility is not in compliance by these tables, it can establish compliance by estimating a dose using screening procedure developed by the National Council on Radiation Protection and Measurements with a radiological source term derived using EPA approved emission factors. These procedures are described in a "Guide for Determining Compliance with the Clean Air Act Standards for Radionuclide Emissions From NRC-Licensed and Non-DOE Federal Facilities."

A user-friendly computer program called COMPLY has been developed to reduce the burden on the regulated community. The Agency has also prepared a "User's Guide for the COMPLY Code" to assist the regulated community in using the code, and in handling more complex situations such as multiple release points. The basis for these compliance procedures are provided in "Background Information Document: Procedures Approved for Demonstrating Compliance with 40 CFR Part 61, Subpart I". The compliance model is the highest level in the COMPLY computer code and provides for the most realistic assessment of dose by allowing the use of site-specific information.

2. Table of Annual Possession Quantity

(a) Table 1 may be used for determining if facilities are in compliance with the standard. The possession table can only be used if the following conditions are met:

(i) No person lives within 10 meters of any release point; and

(ii) No milk, meat, or vegetables are produced within 100 meters of any release point.

(b) Procedures described in Reference (1) shall be used to determine compliance or exemption from reporting by use of Table 2.

TABLE 1—ANNUAL POSSESSION QUANTITIES FOR ENVIRONMENTAL COMPLIANCE—Continued  
[Annual Possession Quantities (Ci/yr)]

| Radionuclide | Gaseous form* | Liquid/powder forms | Solid form* |
|--------------|---------------|---------------------|-------------|
| Ag-108m      | 6.5E-06       | 6.5E-03             | 6.5E+00     |
| Ag-110m      | 9.4E-05       | 9.4E-02             | 9.4E+01     |
| Ag-111       | 6.7E-02       | 6.7E+01             | 6.7E+04     |
| Al-26        | 4.0E-06       | 4.0E-03             | 4.0E+00     |
| Am-241       | 2.3E-06       | 2.3E-03             | 2.3E+00     |
| Am-242       | 1.8E-02       | 1.8E+01             | 1.8E+04     |
| Am-242m      | 2.5E-06       | 2.5E-03             | 2.5E+00     |
| Am-243       | 2.3E-06       | 2.3E-03             | 2.3E+00     |
| Am-244       | 4.6E-02       | 4.6E+01             | 4.6E+04     |
| Am-245       | 7.0E+00       | 7.0E+03             | 7.0E+06     |
| Am-246       | 9.8E-01       | 9.8E+02             | 9.8E+05     |
| Ar-37        | 1.4E+06       |                     |             |
| Ar-41        | 1.4E+00       |                     |             |
| As-72        | 2.9E-02       | 2.9E+01             | 2.9E+04     |
| As-73        | 6.0E-02       | 6.0E+01             | 6.0E+04     |
| As-74        | 4.3E-03       | 4.3E+00             | 4.3E+03     |
| As-76        | 8.8E-02       | 8.8E+01             | 8.8E+04     |
| As-77        | 7.9E-01       | 7.9E+02             | 7.9E+05     |
| At-211       | 1.0E-02       | 1.0E+01             | 1.0E+04     |
| Au-193       | 4.2E-01       | 4.2E+02             | 4.2E+05     |
| Au-194       | 3.5E-02       | 3.5E+01             | 3.5E+04     |
| Au-195       | 3.3E-03       | 3.3E+00             | 3.3E+03     |
| Au-198       | 4.6E-02       | 4.6E+01             | 4.6E+04     |
| Au-199       | 1.5E-01       | 1.5E+02             | 1.5E+05     |
| Ba-131       | 1.0E-02       | 1.0E+01             | 1.0E+04     |
| Ba-133       | 4.9E-05       | 4.9E-02             | 4.9E+01     |
| Ba-133m      | 9.3E-02       | 9.3E+01             | 9.3E+04     |
| Ba-135m      | 5.8E-01       | 5.8E+02             | 5.8E+05     |
| Ba-139       | 4.7E+00       | 4.7E+03             | 4.7E+06     |
| Ba-140       | 2.1E-03       | 2.1E+00             | 2.1E+03     |
| Ba-141       | 1.3E+00       | 1.3E+03             | 1.3E+06     |
| Ba-142       | 1.1E+00       | 1.1E+03             | 1.1E+06     |
| Be-7         | 2.3E-02       | 2.3E+01             | 2.3E+04     |
| Be-10        | 3.0E-03       | 3.0E+00             | 3.0E+03     |
| Bi-206       | 3.1E-03       | 3.1E+00             | 3.1E+03     |
| Bi-207       | 8.4E-06       | 8.4E-03             | 8.4E+00     |
| Bi-210       | 4.2E-03       | 4.2E+00             | 4.2E+03     |
| Bi-212       | 4.7E-02       | 4.7E+01             | 4.7E+04     |
| Bi-213       | 6.0E-02       | 6.0E+01             | 6.0E+04     |
| Bi-214       | 1.4E-01       | 1.4E+02             | 1.4E+05     |
| Bk-249       | 7.0E-04       | 7.0E-01             | 7.0E+02     |
| Bk-250       | 1.0E-01       | 1.0E+02             | 1.0E+05     |
| Br-77        | 7.5E-02       | 7.5E+01             | 7.5E+04     |
| Br-80        | 1.2E+01       | 1.2E+04             | 1.2E+07     |
| Br-80m       | 1.5E+00       | 1.5E+03             | 1.5E+06     |
| Br-82        | 1.6E-02       | 1.6E+01             | 1.6E+04     |
| Br-83        | 9.9E+00       | 9.9E+03             | 9.9E+06     |
| Br-84        | 5.6E-01       | 5.6E+02             | 5.6E+05     |
| C-11         | 1.3E+00       | 1.3E+03             | 1.3E+06     |
| C-14         | 2.9E-01       | 2.9E+02             | 2.9E+05     |
| Ca-41        | 2.7E-02       | 2.7E+01             | 2.7E+04     |
| Ca-45        | 5.8E-02       | 5.8E+01             | 5.8E+04     |
| Ca-47        | 1.1E-02       | 1.1E+01             | 1.1E+04     |
| Cd-109       | 5.0E-03       | 5.0E+00             | 5.0E+03     |
| Cd-113       | 3.3E-04       | 3.3E-01             | 3.3E+02     |
| Cd-113m      | 4.4E-04       | 4.4E-01             | 4.4E+02     |
| Cd-115       | 5.4E-02       | 5.4E+01             | 5.4E+04     |
| Cd-115m      | 1.0E-02       | 1.0E+01             | 1.0E+04     |
| Cd-117       | 5.6E-02       | 5.6E+01             | 5.6E+04     |
| Cd-117m      | 1.3E-01       | 1.3E+02             | 1.3E+05     |
| Ce-139       | 2.6E-03       | 2.6E+00             | 2.6E+03     |
| Ce-141       | 1.8E-02       | 1.8E+01             | 1.8E+04     |
| Ce-143       | 1.0E-01       | 1.0E+02             | 1.0E+05     |
| Ce-144       | 1.7E-03       | 1.7E+00             | 1.7E+03     |
| Cf-248       | 2.0E-05       | 2.0E-02             | 2.0E+01     |
| Cf-249       | 1.7E-06       | 1.7E-03             | 1.7E+00     |
| Cf-250       | 4.0E-06       | 4.0E-03             | 4.0E+00     |
| Cf-251       | 1.7E-06       | 1.7E-03             | 1.7E+00     |

TABLE 1—ANNUAL POSSESSION QUANTITIES FOR ENVIRONMENTAL COMPLIANCE  
[Annual Possession Quantities (Ci/yr)]

| Radionuclide | Gaseous form* | Liquid/powder forms | Solid form* |
|--------------|---------------|---------------------|-------------|
| Ac-225       | 9.6E-05       | 9.6E-02             | 9.6E+01     |
| Ac-227       | 1.6E-07       | 1.6E-04             | 1.6E-01     |
| Ac-228       | 3.4E-03       | 3.4E+00             | 3.4E+03     |
| Ag-106       | 1.6E+00       | 1.6E+03             | 1.6E+06     |
| Ag-106m      | 2.6E-03       | 2.6E+00             | 2.6E+03     |

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TABLE 1—ANNUAL POSSESSION QUANTITIES FOR ENVIRONMENTAL COMPLIANCE—Continued  
[Annual Possession Quantities (Ci/yr)]

| Radionuclide | Gaseous form* | Liquid/powder forms | Solid form* |
|--------------|---------------|---------------------|-------------|
| Cf-252       | 6.4E-06       | 6.4E-03             | 6.4E+00     |
| Cf-253       | 3.3E-04       | 3.3E-01             | 3.3E+02     |
| Cf-254       | 3.6E-06       | 3.6E-03             | 3.6E+00     |
| Cl-36        | 1.9E-04       | 1.9E-01             | 1.9E+02     |
| Cl-38        | 6.5E-01       | 6.5E+02             | 6.5E+05     |
| Cm-242       | 6.0E-05       | 6.0E-02             | 6.0E+01     |
| Cm-243       | 3.3E-06       | 3.3E-03             | 3.3E+00     |
| Cm-244       | 4.2E-06       | 4.2E-03             | 4.2E+00     |
| Cm-245       | 2.3E-06       | 2.3E-03             | 2.3E+00     |
| Cm-246       | 2.3E-06       | 2.3E-03             | 2.3E+00     |
| Cm-247       | 2.3E-06       | 2.3E-03             | 2.3E+00     |
| Cm-248       | 6.4E-07       | 6.4E-04             | 6.4E-01     |
| Cm-249       | 4.6E+00       | 4.6E+03             | 4.6E+06     |
| Cm-250       | 1.1E-07       | 1.1E-04             | 1.1E-01     |
| Co-56        | 2.4E-04       | 2.4E-01             | 2.4E+02     |
| Co-57        | 1.6E-03       | 1.6E+00             | 1.6E+03     |
| Co-58        | 9.0E-04       | 9.0E-01             | 9.0E+02     |
| Co-58m       | 1.7E-01       | 1.7E+02             | 1.7E+05     |
| Co-60        | 1.6E-05       | 1.6E-02             | 1.6E+01     |
| Co-60m       | 4.0E+00       | 4.0E+03             | 4.0E+06     |
| Co-61        | 3.8E+00       | 3.8E+03             | 3.8E+06     |
| Cr-49        | 9.0E-01       | 9.0E+02             | 9.0E+05     |
| Cr-51        | 6.3E-02       | 6.3E+01             | 6.3E+04     |
| Cs-129       | 1.5E-01       | 1.5E+02             | 1.5E+05     |
| Cs-131       | 2.8E-01       | 2.8E+02             | 2.8E+05     |
| Cs-132       | 1.3E-02       | 1.3E+01             | 1.3E+04     |
| Cs-134       | 5.2E-05       | 5.2E-02             | 5.2E+01     |
| Cs-134m      | 3.2E-01       | 3.2E+02             | 3.2E+05     |
| Cs-135       | 2.4E-02       | 2.4E+01             | 2.4E+04     |
| Cs-136       | 2.1E-03       | 2.1E+00             | 2.1E+03     |
| Cs-137       | 2.3E-05       | 2.3E-02             | 2.3E+01     |
| Cs-138       | 4.4E-01       | 4.4E+02             | 4.4E+05     |
| Cu-61        | 4.0E-01       | 4.0E+02             | 4.0E+05     |
| Cu-64        | 5.2E-01       | 5.2E+02             | 5.2E+05     |
| Cu-67        | 1.5E-01       | 1.5E+02             | 1.5E+05     |
| Dy-157       | 4.4E-01       | 4.4E+02             | 4.4E+05     |
| Dy-165       | 5.6E+00       | 5.6E+03             | 5.6E+06     |
| Dy-166       | 8.1E-02       | 8.1E+01             | 8.1E+04     |
| Er-169       | 4.0E-01       | 4.0E+02             | 4.0E+05     |
| Er-171       | 3.6E-01       | 3.6E+02             | 3.6E+05     |
| Es-253       | 2.6E-04       | 2.6E-01             | 2.6E+02     |
| Es-254       | 2.3E-05       | 2.3E-02             | 2.3E+01     |
| Es-254m      | 1.8E-03       | 1.8E+00             | 1.8E+03     |
| Eu-152       | 1.6E-05       | 1.6E-02             | 1.6E+01     |
| Eu-152m      | 3.5E-01       | 3.5E+02             | 3.5E+05     |
| Eu-154       | 2.0E-05       | 2.0E-02             | 2.0E+01     |
| Eu-155       | 5.2E-04       | 5.2E-01             | 5.2E+02     |
| Eu-156       | 3.2E-03       | 3.2E+00             | 3.2E+03     |
| F-18         | 5.6E-01       | 5.6E+02             | 5.6E+05     |
| Fe-52        | 4.9E-02       | 4.9E+01             | 4.9E+04     |
| Fe-55        | 1.4E-01       | 1.4E+02             | 1.4E+05     |
| Fe-59        | 1.3E-03       | 1.3E+00             | 1.3E+03     |
| Fm-254       | 1.8E-02       | 1.8E+01             | 1.8E+04     |
| Fm-255       | 4.0E-03       | 4.0E+00             | 4.0E+03     |
| Fr-223       | 1.4E-01       | 1.4E+02             | 1.4E+05     |
| Ga-66        | 5.6E-02       | 5.6E+01             | 5.6E+04     |
| Ga-67        | 1.1E-01       | 1.1E+02             | 1.1E+05     |
| Ga-68        | 7.6E-01       | 7.6E+02             | 7.6E+05     |
| Ga-72        | 3.6E-02       | 3.6E+01             | 3.6E+04     |
| Gd-152       | 4.4E-06       | 4.4E-03             | 4.4E+00     |
| Gd-153       | 2.0E-03       | 2.0E+00             | 2.0E+03     |
| Gd-159       | 6.8E-01       | 6.8E+02             | 6.8E+05     |
| Ge-68        | 2.3E-04       | 2.3E-01             | 2.3E+02     |
| Ge-71        | 2.6E+00       | 2.6E+03             | 2.6E+06     |
| Ge-77        | 1.0E-01       | 1.0E+02             | 1.0E+05     |
| H-3          | 1.5E+01       | 1.5E+04             | 1.5E+07     |
| Hf-181       | 2.5E-03       | 2.5E+00             | 2.5E+03     |
| Hg-193m      | 9.5E-02       | 9.5E+01             | 9.5E+04     |

TABLE 1—ANNUAL POSSESSION QUANTITIES FOR ENVIRONMENTAL COMPLIANCE—Continued  
[Annual Possession Quantities (Ci/yr)]

| Radionuclide | Gaseous form* | Liquid/powder forms | Solid form* |
|--------------|---------------|---------------------|-------------|
| Hg-197       | 2.4E-01       | 2.4E+02             | 2.4E+05     |
| Hg-197m      | 2.5E-01       | 2.5E+02             | 2.5E+05     |
| Hg-203       | 5.2E-03       | 5.2E+00             | 5.2E+03     |
| Ho-166       | 2.8E-01       | 2.8E+02             | 2.8E+05     |
| Ho-166m      | 6.0E-06       | 6.0E-03             | 6.0E+00     |
| I-123        | 4.9E-01       | 4.9E+02             | 4.9E+05     |
| I-124        | 9.3E-03       | 9.3E+00             | 9.3E+03     |
| I-125        | 6.2E-03       | 6.2E+00             | 6.2E+03     |
| I-126        | 3.7E-03       | 3.7E+00             | 3.7E+03     |
| I-128        | 9.3E+00       | 9.3E+03             | 9.3E+06     |
| I-129        | 2.6E-04       | 2.6E-01             | 2.6E+02     |
| I-130        | 4.6E-02       | 4.6E+01             | 4.6E+04     |
| I-131        | 6.7E-03       | 6.7E+00             | 6.7E+03     |
| I-132        | 2.0E-01       | 2.0E+02             | 2.0E+05     |
| I-133        | 6.7E-02       | 6.7E+01             | 6.7E+04     |
| I-134        | 3.2E-01       | 3.2E+02             | 3.2E+05     |
| I-135        | 1.2E-01       | 1.2E+02             | 1.2E+05     |
| In-111       | 4.9E-02       | 4.9E+01             | 4.9E+04     |
| In-113m      | 2.1E+00       | 2.1E+03             | 2.1E+06     |
| In-114m      | 4.9E-03       | 4.9E+00             | 4.9E+03     |
| In-115       | 2.7E-04       | 2.7E-01             | 2.7E+02     |
| In-115m      | 1.4E+00       | 1.4E+03             | 1.4E+06     |
| In-116m      | 3.5E-01       | 3.5E+02             | 3.5E+05     |
| In-117       | 1.3E+00       | 1.3E+03             | 1.3E+06     |
| In-117m      | 7.6E-02       | 7.6E+01             | 7.6E+04     |
| Ir-190       | 3.5E-03       | 3.5E+00             | 3.5E+03     |
| Ir-192       | 9.7E-04       | 9.7E-01             | 9.7E+02     |
| Ir-194       | 2.5E-01       | 2.5E+02             | 2.5E+05     |
| Ir-194m      | 1.5E-04       | 1.5E-01             | 1.5E+02     |
| K-40         | 6.8E-05       | 6.8E-02             | 6.8E+01     |
| K-42         | 2.9E-01       | 2.9E+02             | 2.9E+05     |
| K-43         | 6.0E-02       | 6.0E+01             | 6.0E+04     |
| K-44         | 4.9E-01       | 4.9E+02             | 4.9E+05     |
| Kr-79        | 7.0E+00       | .....               | .....       |
| Kr-81        | 1.8E+02       | .....               | .....       |
| Kr-83m       | 2.0E+04       | .....               | .....       |
| Kr-85        | 8.4E+02       | .....               | .....       |
| Kr-85m       | 1.1E+01       | .....               | .....       |
| Kr-87        | 2.0E+00       | .....               | .....       |
| Kr-88        | 4.2E-01       | .....               | .....       |
| La-140       | 1.6E-02       | 1.6E+01             | 1.6E+04     |
| La-141       | 1.1E+00       | 1.1E+03             | 1.1E+06     |
| La-142       | 2.3E-01       | 2.3E+02             | 2.3E+05     |
| Lu-177       | 1.4E-01       | 1.4E+02             | 1.4E+05     |
| Lu-177m      | 3.5E-04       | 3.5E-01             | 3.5E+02     |
| Mg-28        | 2.1E-02       | 2.1E+01             | 2.1E+04     |
| Mn-52        | 3.5E-03       | 3.5E+00             | 3.5E+03     |
| Mn-52m       | 5.2E-01       | 5.2E+02             | 5.2E+05     |
| Mn-53        | 5.7E-02       | 5.7E+01             | 5.7E+04     |
| Mn-54        | 2.5E-04       | 2.5E-01             | 2.5E+02     |
| Mn-56        | 2.5E-01       | 2.5E+02             | 2.5E+05     |
| Mo-93        | 1.5E-03       | 1.5E+00             | 1.5E+03     |
| Mo-99**      | 5.7E-02       | 5.7E+01             | 5.7E+04     |
| Mo-101       | 8.4E-01       | 8.4E+02             | 8.4E+05     |
| Na-22        | 3.2E-05       | 3.2E-02             | 3.2E+01     |
| Na-24        | 2.6E-02       | 2.6E+01             | 2.6E+04     |
| Nb-90        | 2.5E-02       | 2.5E+01             | 2.5E+04     |
| Nb-93m       | 1.2E-02       | 1.2E+01             | 1.2E+04     |
| Nb-94        | 6.0E-06       | 6.0E-03             | 6.0E+00     |
| Nb-95        | 2.3E-03       | 2.3E+00             | 2.3E+03     |
| Nb-95m       | 2.0E-02       | 2.0E+01             | 2.0E+04     |
| Nb-96        | 2.5E-02       | 2.5E+01             | 2.5E+04     |
| Nb-97        | 1.0E+00       | 1.0E+03             | 1.0E+06     |
| Nd-147       | 3.0E-02       | 3.0E+01             | 3.0E+04     |
| Nd-149       | 1.1E+00       | 1.1E+03             | 1.1E+06     |
| Ni-56        | 2.0E-03       | 2.0E+00             | 2.0E+03     |
| Ni-57        | 2.1E-02       | 2.1E+01             | 2.1E+04     |
| Ni-59        | 2.2E-02       | 2.2E+01             | 2.2E+04     |

TABLE 1—ANNUAL POSSESSION QUANTITIES FOR ENVIRONMENTAL COMPLIANCE—Continued  
[Annual Possession Quantities (Ci/yr)]

| Radionuclide | Gaseous form* | Liquid/powder forms | Solid form* |
|--------------|---------------|---------------------|-------------|
| Ni-63        | 1.4E-01       | 1.4E+02             | 1.4E+05     |
| Ni-65        | 7.0E-01       | 7.0E+02             | 7.0E+05     |
| Np-235       | 3.0E-02       | 3.0E+01             | 3.0E+04     |
| Np-237       | 1.8E-06       | 1.8E-03             | 1.8E+00     |
| Np-238       | 1.9E-02       | 1.9E+01             | 1.9E+04     |
| Np-239       | 1.0E-01       | 1.0E+02             | 1.0E+05     |
| Np-240       | 6.5E-01       | 6.5E+02             | 6.5E+05     |
| Np-240m      | 4.7E+00       | 4.7E+03             | 4.7E+06     |
| Os-185       | 9.2E-04       | 9.2E-01             | 9.2E+02     |
| Os-191m      | 9.0E-01       | 9.0E+02             | 9.0E+05     |
| Os-191       | 3.8E-02       | 3.8E+01             | 3.8E+04     |
| Os-193       | 2.9E-01       | 2.9E+02             | 2.9E+05     |
| P-32         | 1.7E-02       | 1.7E+01             | 1.7E+04     |
| P-33         | 1.2E-01       | 1.2E+02             | 1.2E+05     |
| Pa-230       | 6.3E-04       | 6.3E-01             | 6.3E+02     |
| Pa-231       | 8.3E-07       | 8.3E-04             | 8.3E-01     |
| Pa-233       | 9.3E-03       | 9.3E+00             | 9.3E+03     |
| Pa-234       | 9.3E-02       | 9.3E+01             | 9.3E+04     |
| Pb-203       | 8.3E-02       | 8.3E+01             | 8.3E+04     |
| Pb-205       | 1.2E-02       | 1.2E+01             | 1.2E+04     |
| Pb-209       | 1.1E+01       | 1.1E+04             | 1.1E+07     |
| Pb-210       | 5.5E-05       | 5.5E-02             | 5.5E+01     |
| Pb-211       | 1.2E-01       | 1.2E+02             | 1.2E+05     |
| Pb-212       | 6.0E-03       | 6.0E+00             | 6.0E+03     |
| Pb-214       | 1.2E-01       | 1.2E+02             | 1.2E+05     |
| Pd-103       | 2.1E-01       | 2.1E+02             | 2.1E+05     |
| Pd-107       | 8.2E-02       | 8.2E+01             | 8.2E+04     |
| Pd-109       | 9.4E-01       | 9.4E+02             | 9.4E+05     |
| Pm-143       | 7.6E-04       | 7.6E-01             | 7.6E+02     |
| Pm-144       | 1.1E-04       | 1.1E-01             | 1.1E+02     |
| Pm-145       | 5.2E-04       | 5.2E-01             | 5.2E+02     |
| Pm-146       | 4.4E-05       | 4.4E-02             | 4.4E+01     |
| Pm-147       | 2.6E-02       | 2.6E+01             | 2.6E+04     |
| Pm-148       | 1.7E-02       | 1.7E+01             | 1.7E+04     |
| Pm-148m      | 7.6E-04       | 7.6E-01             | 7.6E+02     |
| Pm-149       | 2.8E-01       | 2.8E+02             | 2.8E+05     |
| Pm-151       | 1.2E-01       | 1.2E+02             | 1.2E+05     |
| Po-210       | 9.3E-05       | 9.3E-02             | 9.3E+01     |
| Pr-142       | 2.8E-01       | 2.8E+02             | 2.8E+05     |
| Pr-143       | 1.0E-01       | 1.0E+02             | 1.0E+05     |
| Pr-144       | 1.5E+01       | 1.5E+04             | 1.5E+07     |
| Pt-191       | 6.4E-02       | 6.4E+01             | 6.4E+04     |
| Pt-193       | 2.1E-02       | 2.1E+01             | 2.1E+04     |
| Pt-193m      | 4.8E-01       | 4.8E+02             | 4.8E+05     |
| Pt-195m      | 1.4E-01       | 1.4E+02             | 1.4E+05     |
| Pt-197       | 1.1E+00       | 1.1E+03             | 1.1E+06     |
| Pt-197m      | 3.6E+00       | 3.6E+03             | 3.6E+06     |
| Pu-236       | 7.0E-06       | 7.0E-03             | 7.0E+00     |
| Pu-237       | 2.3E-02       | 2.3E+01             | 2.3E+04     |
| Pu-238       | 2.7E-06       | 2.7E-03             | 2.7E+00     |
| Pu-239       | 2.5E-06       | 2.5E-03             | 2.5E+00     |
| Pu-240       | 2.5E-06       | 2.5E-03             | 2.5E+00     |
| Pu-241       | 1.3E-04       | 1.3E-01             | 1.3E+02     |
| Pu-242       | 2.5E-06       | 2.5E-03             | 2.5E+00     |
| Pu-243       | 3.8E+00       | 3.8E+03             | 3.8E+06     |
| Pu-244       | 2.4E-06       | 2.4E-03             | 2.4E+00     |
| Pu-245       | 2.1E-01       | 2.1E+02             | 2.1E+05     |
| Pu-246       | 4.8E-03       | 4.8E+00             | 4.8E+03     |
| Ra-223       | 1.3E-04       | 1.3E-01             | 1.3E+02     |
| Ra-224       | 3.2E-04       | 3.2E-01             | 3.2E+02     |
| Ra-225       | 1.3E-04       | 1.3E-01             | 1.3E+02     |
| Ra-226       | 5.5E-06       | 5.5E-03             | 5.5E+00     |
| Ra-228       | 1.3E-05       | 1.3E-02             | 1.3E+01     |
| Rb-81        | 4.2E-01       | 4.2E+02             | 4.2E+05     |
| Rb-83        | 1.4E-03       | 1.4E+00             | 1.4E+03     |
| Rb-84        | 2.0E-03       | 2.0E+00             | 2.0E+03     |
| Rb-86        | 1.7E-02       | 1.7E+01             | 1.7E+04     |
| Rb-87        | 1.0E-02       | 1.0E+01             | 1.0E+04     |

TABLE 1—ANNUAL POSSESSION QUANTITIES FOR ENVIRONMENTAL COMPLIANCE—Continued  
[Annual Possession Quantities (Ci/yr)]

| Radionuclide | Gaseous form* | Liquid/powder forms | Solid form* |
|--------------|---------------|---------------------|-------------|
| Rb-88        | 1.7E+00       | 1.7E+03             | 1.7E+06     |
| Rb-89        | 6.4E-01       | 6.4E+02             | 6.4E+05     |
| Re-184       | 1.8E-03       | 1.8E+00             | 1.8E+03     |
| Re-184m      | 3.6E-04       | 3.6E-01             | 3.6E+02     |
| Re-186       | 1.9E-01       | 1.9E+02             | 1.9E+05     |
| Re-187       | 9.3E+00       | 9.3E+03             | 9.3E+06     |
| Re-188       | 3.7E-01       | 3.7E+02             | 3.7E+05     |
| Rh-103m      | 1.7E+02       | 1.7E+05             | 1.7E+08     |
| Rh-105       | 3.4E-01       | 3.4E+02             | 3.4E+05     |
| Ru-97        | 8.3E-02       | 8.3E+01             | 8.3E+04     |
| Ru-103       | 3.1E-03       | 3.1E+00             | 3.1E+03     |
| Ru-105       | 2.9E-01       | 2.9E+02             | 2.9E+05     |
| Ru-106       | 5.9E-04       | 5.9E-01             | 5.9E+02     |
| S-35         | 7.5E-02       | 7.5E+01             | 7.5E+04     |
| Sb-117       | 2.0E+00       | 2.0E+03             | 2.0E+06     |
| Sb-122       | 3.9E-02       | 3.9E+01             | 3.9E+04     |
| Sb-124       | 6.0E-04       | 6.0E-01             | 6.0E+02     |
| Sb-125       | 1.4E-04       | 1.4E-01             | 1.4E+02     |
| Sb-126       | 1.8E-03       | 1.8E+00             | 1.8E+03     |
| Sb-126m      | 7.6E-01       | 7.6E+02             | 7.6E+05     |
| Sb-127       | 2.0E-02       | 2.0E+01             | 2.0E+04     |
| Sb-129       | 1.8E-01       | 1.8E+02             | 1.8E+05     |
| Sc-44        | 1.4E-01       | 1.4E+02             | 1.4E+05     |
| Sc-46        | 4.0E-04       | 4.0E-01             | 4.0E+02     |
| Sc-47        | 1.1E-01       | 1.1E+02             | 1.1E+05     |
| Sc-48        | 1.1E-02       | 1.1E+01             | 1.1E+04     |
| Sc-49        | 1.0E+01       | 1.0E+04             | 1.0E+07     |
| Se-73        | 1.6E-01       | 1.6E+02             | 1.6E+05     |
| Se-75        | 1.1E-03       | 1.1E+00             | 1.1E+03     |
| Se-79        | 6.9E-03       | 6.9E+00             | 6.9E+03     |
| Si-31        | 4.7E+00       | 4.7E+03             | 4.7E+06     |
| Si-32        | 7.2E-04       | 7.2E-01             | 7.2E+02     |
| Sm-147       | 1.4E-05       | 1.4E-02             | 1.4E+01     |
| Sm-151       | 3.5E-02       | 3.5E+01             | 3.5E+04     |
| Sm-153       | 2.4E-01       | 2.4E+02             | 2.4E+05     |
| Sn-113       | 1.9E-03       | 1.9E+00             | 1.9E+03     |
| Sn-117m      | 2.3E-02       | 2.3E+01             | 2.3E+04     |
| Sn-119m      | 2.8E-02       | 2.8E+01             | 2.8E+04     |
| Sn-123       | 1.8E-02       | 1.8E+01             | 1.8E+04     |
| Sn-125       | 7.2E-03       | 7.2E+00             | 7.2E+03     |
| Sn-126       | 4.7E-06       | 4.7E-03             | 4.7E+00     |
| Sr-82        | 1.9E-03       | 1.9E+00             | 1.9E+03     |
| Sr-85        | 1.9E-03       | 1.9E+00             | 1.9E+03     |
| Sr-85m       | 1.5E+00       | 1.5E+03             | 1.5E+06     |
| Sr-87m       | 1.2E+00       | 1.2E+03             | 1.2E+06     |
| Sr-89        | 2.1E-02       | 2.1E+01             | 2.1E+04     |
| Sr-90        | 5.2E-04       | 5.2E-01             | 5.2E+02     |
| Sr-91        | 1.2E-01       | 1.2E+02             | 1.2E+05     |
| Sr-92        | 2.5E-01       | 2.5E+02             | 2.5E+05     |
| Ta-182       | 4.4E-04       | 4.4E-01             | 4.4E+02     |
| Tb-157       | 2.2E-03       | 2.2E+00             | 2.2E+03     |
| Tb-160       | 8.4E-04       | 8.4E-01             | 8.4E+02     |
| Tc-95        | 9.0E-02       | 9.0E+01             | 9.0E+04     |
| Tc-95m       | 1.4E-03       | 1.4E+00             | 1.4E+03     |
| Tc-96        | 5.6E-03       | 5.6E+00             | 5.6E+03     |
| Tc-96m       | 7.0E-01       | 7.0E+02             | 7.0E+05     |
| Tc-97        | 1.5E-03       | 1.5E+00             | 1.5E+03     |
| Tc-97m       | 7.2E-02       | 7.2E+01             | 7.2E+04     |
| Tc-98        | 6.4E-06       | 6.4E-03             | 6.4E+00     |
| Tc-99        | 9.0E-03       | 9.0E+00             | 9.0E+03     |
| Tc-99m       | 1.4E+00       | 1.4E+03             | 1.4E+06     |
| Tc-101       | 3.8E+00       | 3.8E+03             | 3.8E+06     |
| Te-121       | 6.0E-03       | 6.0E+00             | 6.0E+03     |
| Te-121m      | 5.3E-04       | 5.3E-01             | 5.3E+02     |
| Te-123       | 1.2E-03       | 1.2E+00             | 1.2E+03     |
| Te-123m      | 2.7E-03       | 2.7E+00             | 2.7E+03     |
| Te-125m      | 1.5E-02       | 1.5E+01             | 1.5E+04     |
| Te-127       | 2.9E+00       | 2.9E+03             | 2.9E+06     |

TABLE 1—ANNUAL POSSESSION QUANTITIES FOR ENVIRONMENTAL COMPLIANCE—Continued  
[Annual Possession Quantities (Ci/yr)]

| Radionuclide | Gaseous form* | Liquid/powder forms | Solid form* |
|--------------|---------------|---------------------|-------------|
| Te-127m      | 7.3E-03       | 7.3E+00             | 7.3E+03     |
| Te-129       | 6.5E+00       | 6.5E+03             | 6.5E+06     |
| Te-129m      | 6.1E-03       | 6.1E+00             | 6.1E+03     |
| Te-131       | 9.4E-01       | 9.4E+02             | 9.4E+05     |
| Te-131m      | 1.8E-02       | 1.8E+01             | 1.8E+04     |
| Te-132       | 6.2E-03       | 6.2E+00             | 6.2E+03     |
| Te-133       | 1.2E+00       | 1.2E+03             | 1.2E+06     |
| Te-133m      | 2.9E-01       | 2.9E+02             | 2.9E+05     |
| Te-134       | 4.4E-01       | 4.4E+02             | 4.4E+05     |
| Th-226       | 3.0E-02       | 3.0E+01             | 3.0E+04     |
| Th-227       | 6.4E-05       | 6.4E-02             | 6.4E+01     |
| Th-228       | 2.9E-06       | 2.9E-03             | 2.9E+00     |
| Th-229       | 4.9E-07       | 4.9E-04             | 4.9E-01     |
| Th-230       | 3.2E-06       | 3.2E-03             | 3.2E+00     |
| Th-231       | 8.4E-01       | 8.4E+02             | 8.4E+05     |
| Th-232       | 6.0E-07       | 6.0E-04             | 6.0E-01     |
| Th-234       | 2.0E-02       | 2.0E+01             | 2.0E+04     |
| Ti-44        | 5.2E-06       | 5.2E-03             | 5.2E+00     |
| Ti-45        | 4.0E-01       | 4.0E+02             | 4.0E+05     |
| Ti-200       | 4.4E-02       | 4.4E+01             | 4.4E+04     |
| Ti-201       | 1.8E-01       | 1.8E+02             | 1.8E+05     |
| Ti-202       | 1.0E-02       | 1.0E+01             | 1.0E+04     |
| Ti-204       | 2.5E-02       | 2.5E+01             | 2.5E+04     |
| Tm-170       | 2.4E-02       | 2.4E+01             | 2.4E+04     |
| Tm-171       | 5.9E-02       | 5.9E+01             | 5.9E+04     |
| U-230        | 5.0E-05       | 5.0E-02             | 5.0E+01     |
| U-231        | 1.4E-01       | 1.4E+02             | 1.4E+05     |
| U-232        | 1.3E-06       | 1.3E-03             | 1.3E+00     |
| U-233        | 7.6E-06       | 7.6E-03             | 7.6E+00     |
| U-234        | 7.6E-06       | 7.6E-03             | 7.6E+00     |
| U-235        | 7.0E-06       | 7.0E-03             | 7.0E+00     |
| U-236        | 8.4E-06       | 8.4E-03             | 8.4E+00     |
| U-237        | 4.7E-02       | 4.7E+01             | 4.7E+04     |
| U-238        | 8.6E-06       | 8.6E-03             | 8.6E+00     |
| U-239        | 8.3E+00       | 8.3E+03             | 8.3E+06     |
| U-240        | 1.8E-01       | 1.8E+02             | 1.8E+05     |
| V-48         | 1.4E-03       | 1.4E+00             | 1.4E+03     |
| V-49         | 1.3E+00       | 1.3E+03             | 1.3E+06     |
| W-181        | 1.1E-02       | 1.1E+01             | 1.1E+04     |
| W-185        | 1.6E-01       | 1.6E+02             | 1.6E+05     |
| W-187        | 1.1E-01       | 1.1E+02             | 1.1E+05     |
| W-188        | 1.0E-02       | 1.0E+01             | 1.0E+04     |
| Xe-122       | 7.6E-02       | 7.6E+01             | 7.6E+04     |
| Xe-123       | 1.6E+00       | 1.6E+03             | 1.6E+06     |
| Xe-125       | 6.0E-01       | .....               | .....       |
| Xe-127       | 7.0E+00       | .....               | .....       |
| Xe-129m      | 7.6E+01       | .....               | .....       |
| Xe-131m      | 2.2E+02       | .....               | .....       |
| Xe-133       | 5.2E+01       | .....               | .....       |
| Xe-133m      | 6.0E+01       | .....               | .....       |
| Xe-135       | 7.6E+00       | .....               | .....       |
| Xe-135m      | 4.2E+00       | .....               | .....       |
| Xe-138       | 9.9E-01       | .....               | .....       |
| Y-86         | 2.8E-02       | 2.8E+01             | 2.8E+04     |
| Y-87         | 2.3E-02       | 2.3E+01             | 2.3E+04     |
| Y-88         | 2.5E-04       | 2.5E-01             | 2.5E+02     |
| Y-90         | 1.1E-01       | 1.1E+02             | 1.1E+05     |
| Y-90m        | 4.3E-01       | 4.3E+02             | 4.3E+05     |
| Y-91         | 1.8E-02       | 1.8E+01             | 1.8E+04     |
| Y-91m        | 1.6E+00       | 1.6E+03             | 1.6E+06     |
| Y-92         | 7.0E-01       | 7.0E+02             | 7.0E+05     |
| Y-93         | 3.8E-01       | 3.8E+02             | 3.8E+05     |
| Yb-169       | 5.5E-03       | 5.5E+00             | 5.5E+03     |
| Yb-175       | 2.1E-01       | 2.1E+02             | 2.1E+05     |
| Zn-62        | 8.6E-02       | 8.6E+01             | 8.6E+04     |
| Zn-65        | 4.4E-04       | 4.4E-01             | 4.4E+02     |
| Zn-69        | 2.7E+01       | 2.7E+04             | 2.7E+07     |
| Zn-69m       | 2.0E-01       | 2.0E+02             | 2.0E+05     |

TABLE 1—ANNUAL POSSESSION QUANTITIES FOR ENVIRONMENTAL COMPLIANCE—Continued  
[Annual Possession Quantities (Ci/yr)]

| Radionuclide | Gaseous form* | Liquid/powder forms | Solid form* |
|--------------|---------------|---------------------|-------------|
| Zr-86        | 2.4E-02       | 2.4E+01             | 2.4E+04     |
| Zr-88        | 2.7E-04       | 2.7E-01             | 2.7E+02     |
| Zr-89        | 1.6E-02       | 1.6E+01             | 1.6E+04     |
| Zr-93        | 2.8E-03       | 2.8E+00             | 2.8E+03     |
| Zr-95        | 6.4E-04       | 6.4E-01             | 6.4E+02     |
| Zr-97        | 4.6E-02       | 4.6E+01             | 4.6E+04     |

\*Radionuclides boiling at 100°C or less, or exposed to a temperature of 100°C, must be considered a gas. Capsules containing radionuclides in liquid or powder form can be considered to be solids.

\*\*Mo-99 contained in a generator to produce Technetium-99 can be assumed to be a solid.

3. Table of Concentration Levels

(a) Table 2 may be used for determining if facilities are in compliance with the standard.

1. The concentration table as applied to emission estimates can only be used if all releases are from point sources and concentrations have been measured at the stack or vent using EPA-approved methods, and the distance between each stack or vent and the nearest resident is greater than 3 times the diameter of the stack or vent. Procedures provided in Ref. (1) shall be used to determine compliance or exemption from reporting by use of Table 2.

2. The concentration table may be used to determine compliance with the standard based on environmental measurements provided these measurements are made in conformance with the requirements of §61.107(b)(5).

4. NCRP Screening Model

The procedures described in Reference (4) may be used to determine doses to members of the general public from emissions of radionuclides to the atmosphere. Both the total dose from all radionuclides emitted, and the dose caused by radioactive iodine must be considered in accordance with the procedures in Ref. (1).

5. The COMPLY Computer Code

The COMPLY computer code may be used to determine compliance with subpart I. The compliance model in the COMPLY computer code may be used to determine the dose to members of the general public from emissions of radionuclides to the atmosphere. The EPA may add radionuclides to all or any part of COMPLY to cover radionuclides that may be used by the regulated community.

TABLE 2—CONCENTRATION LEVELS FOR ENVIRONMENTAL COMPLIANCE

| Radionuclide | Concentration (Ci/m <sup>3</sup> ) | Radionuclide | Concentration (Ci/m <sup>3</sup> ) |
|--------------|------------------------------------|--------------|------------------------------------|
| Ac-225       | 9.1E-14                            | Bi-207       | 1.0E-14                            |
| Ac-227       | 1.6E-16                            | Bi-210       | 2.9E-13                            |
| Ac-228       | 3.7E-12                            | Bi-212       | 5.6E-11                            |
| Ag-106       | 1.9E-09                            | Bi-213       | 7.1E-11                            |
| Ag-106m      | 1.2E-12                            | Bi-214       | 1.4E-10                            |
| Ag-108m      | 7.1E-15                            | Bk-249       | 5.6E-13                            |
| Ag-110m      | 9.1E-14                            | Bk-250       | 9.1E-11                            |
| Ag-111       | 2.5E-12                            | Br-77        | 4.2E-11                            |
| Al-26        | 4.8E-15                            | Br-80        | 1.4E-08                            |
| Am-241       | 1.9E-15                            | Br-80m       | 1.8E-09                            |
| Am-242       | 1.5E-11                            | Br-82        | 1.2E-11                            |
| Am-242m      | 2.0E-15                            | Br-83        | 1.2E-08                            |
| Am-243       | 1.8E-15                            | Br-84        | 6.7E-10                            |
| Am-244       | 4.0E-11                            | C-11         | 1.5E-09                            |
| Am-245       | 8.3E-09                            | C-14         | 1.0E-11                            |
| Am-246       | 1.2E-09                            | Ca-41        | 4.2E-13                            |
| Ar-37        | 1.6E-03                            | Ca-45        | 1.3E-12                            |
| Ar-41        | 1.7E-09                            | Ca-47        | 2.4E-12                            |
| As-72        | 2.4E-11                            | Cd-109       | 5.9E-13                            |
| As-73        | 1.1E-11                            | Cd-113       | 9.1E-15                            |
| As-74        | 2.2E-12                            | Cd-113m      | 1.7E-14                            |
| As-76        | 5.0E-11                            | Cd-115       | 1.6E-11                            |
| As-77        | 1.6E-10                            | Cd-115m      | 8.3E-13                            |
| At-211       | 1.1E-11                            | Cd-117       | 6.7E-11                            |
| Au-193       | 3.8E-10                            | Cd-117m      | 1.6E-10                            |
| Au-194       | 3.2E-11                            | Ce-139       | 2.6E-12                            |
| Au-195       | 3.1E-12                            | Ce-141       | 6.3E-12                            |
| Au-198       | 2.1E-11                            | Ce-143       | 3.0E-11                            |
| Au-199       | 4.8E-11                            | Ce-144       | 6.2E-13                            |
| Ba-131       | 7.1E-12                            | Cf-248       | 1.8E-14                            |
| Ba-133       | 5.9E-14                            | Cf-249       | 1.4E-15                            |
| Ba-133m      | 5.9E-11                            | Cf-250       | 3.2E-15                            |
| Ba-135m      | 1.8E-10                            | Cf-251       | 1.4E-15                            |
| Ba-139       | 5.6E-09                            | Cf-252       | 5.6E-15                            |
| Ba-140       | 1.3E-12                            | Cf-253       | 3.1E-13                            |
| Ba-141       | 1.4E-09                            | Cf-254       | 3.0E-15                            |
| Ba-142       | 1.3E-09                            | Cl-36        | 2.7E-15                            |
| Be-7         | 2.3E-11                            | Cl-38        | 7.7E-10                            |
| Be-10        | 1.6E-12                            | Cm-242       | 5.3E-14                            |
| Bi-206       | 2.3E-12                            | Cm-243       | 2.6E-15                            |
| Cm-244       | 3.3E-15                            | Eu-156       | 1.9E-12                            |
| Cm-245       | 1.8E-15                            | F-18         | 6.7E-10                            |
| Cm-246       | 1.9E-15                            | Fe-52        | 5.6E-11                            |
| Cm-247       | 1.9E-15                            | Fe-55        | 9.1E-12                            |
| Cm-248       | 5.0E-16                            | Fe-59        | 6.7E-13                            |
| Cm-249       | 3.7E-09                            | Fm-254       | 2.0E-11                            |
| Cm-250       | 9.1E-17                            | Fm-255       | 4.3E-12                            |
| Co-56        | 1.8E-13                            | Fr-223       | 3.3E-11                            |
| Co-57        | 1.3E-12                            | Ga-66        | 6.2E-11                            |
| Co-58        | 6.7E-13                            | Ga-67        | 7.1E-11                            |
| Co-58m       | 1.2E-10                            | Ga-68        | 9.1E-10                            |
| Co-60        | 1.7E-14                            | Ga-72        | 3.8E-11                            |
| Co-60m       | 4.3E-09                            | Gd-152       | 5.0E-15                            |
| Co-61        | 4.5E-09                            | Gd-153       | 2.1E-12                            |
| Cr-49        | 1.1E-09                            | Gd-159       | 2.9E-10                            |
| Cr-51        | 3.1E-11                            | Ge-68        | 2.0E-13                            |
| Cs-129       | 1.4E-10                            | Ge-71        | 2.4E-10                            |
| Cs-131       | 3.3E-11                            | Ge-77        | 1.0E-10                            |
| Cs-132       | 4.8E-12                            | H-3          | 1.5E-09                            |
| Cs-134       | 2.7E-14                            | Hf-181       | 1.9E-12                            |
| Cs-134m      | 1.7E-10                            | Hg-193m      | 1.0E-10                            |
| Cs-135       | 4.0E-13                            | Hg-197       | 8.3E-11                            |
| Cs-136       | 5.3E-13                            | Hg-197m      | 1.1E-10                            |
| Cs-137       | 1.9E-14                            | Hg-203       | 1.0E-12                            |
| Cs-138       | 5.3E-10                            | Ho-166       | 7.1E-11                            |
| Cu-61        | 4.8E-10                            | Ho-166m      | 7.1E-15                            |
| Cu-64        | 5.3E-10                            | I-123        | 4.3E-10                            |
| Cu-67        | 5.0E-11                            | I-124        | 6.2E-13                            |
| Dy-157       | 5.0E-10                            | I-125        | 1.2E-13                            |
| Dy-165       | 6.7E-09                            | I-126        | 1.1E-13                            |
| Dy-166       | 1.1E-11                            | I-128        | 1.1E-08                            |

TABLE 2—CONCENTRATION LEVELS FOR ENVIRONMENTAL COMPLIANCE—Continued

| Radionuclide | Concentration (Ci/m <sup>3</sup> ) | Radionuclide | Concentration (Ci/m <sup>3</sup> ) |
|--------------|------------------------------------|--------------|------------------------------------|
| Er-169       | 2.9E-11                            | I-129        | 9.1E-15                            |
| Er-171       | 4.0E-10                            | I-130        | 4.5E-11                            |
| Es-253       | 2.4E-13                            | I-131        | 2.1E-13                            |
| Es-254       | 2.0E-14                            | I-132        | 2.3E-10                            |
| Es-254m      | 1.8E-12                            | I-133        | 2.0E-11                            |
| Eu-152       | 2.0E-14                            | I-134        | 3.8E-10                            |
| Eu-152m      | 3.6E-10                            | I-135        | 1.2E-10                            |
| Eu-154       | 2.3E-14                            | In-111       | 3.6E-11                            |
| Eu-155       | 5.9E-13                            | In-113m      | 2.5E-09                            |
| In-114m      | 9.1E-13                            | Nb-95        | 2.2E-12                            |
| In-115       | 7.1E-14                            | Nb-95m       | 1.4E-11                            |
| In-115m      | 1.6E-09                            | Nb-96        | 2.4E-11                            |
| In-116m      | 4.2E-10                            | Nb-97        | 1.2E-09                            |
| In-117       | 1.6E-09                            | Nd-147       | 7.7E-12                            |
| In-117m      | 9.1E-11                            | Nd-149       | 7.1E-10                            |
| Ir-190       | 2.6E-12                            | Ni-56        | 1.7E-12                            |
| Ir-192       | 9.1E-13                            | Ni-57        | 1.8E-11                            |
| Ir-194       | 1.1E-10                            | Ni-59        | 1.5E-11                            |
| Ir-194m      | 1.7E-13                            | Ni-63        | 1.4E-11                            |
| K-40         | 2.7E-14                            | Ni-65        | 8.3E-10                            |
| K-42         | 2.6E-10                            | Np-235       | 2.5E-11                            |
| K-43         | 6.2E-11                            | Np-237       | 1.2E-15                            |
| K-44         | 5.9E-10                            | Np-238       | 1.4E-11                            |
| Kr-79        | 8.3E-09                            | Np-239       | 3.8E-11                            |
| Kr-81        | 2.1E-07                            | Np-240       | 7.7E-10                            |
| Kr-83m       | 2.3E-05                            | Np-240m      | 5.6E-09                            |
| Kr-85        | 1.0E-06                            | Os-185       | 1.0E-12                            |
| Kr-85m       | 1.3E-08                            | Os-191m      | 2.9E-10                            |
| Kr-87        | 2.4E-09                            | Os-191       | 1.1E-11                            |
| Kr-88        | 5.0E-10                            | Os-193       | 9.1E-11                            |
| La-140       | 1.2E-11                            | P-32         | 3.3E-13                            |
| La-141       | 7.7E-10                            | P-33         | 2.4E-12                            |
| La-142       | 2.7E-10                            | Pa-230       | 3.2E-13                            |
| Lu-177       | 2.4E-11                            | Pa-231       | 5.9E-16                            |
| Lu-177m      | 3.6E-13                            | Pa-233       | 4.8E-12                            |
| Mg-28        | 1.5E-11                            | Pa-234       | 1.1E-10                            |
| Mn-52        | 2.8E-12                            | Pb-203       | 6.2E-11                            |
| Mn-52m       | 6.2E-10                            | Pb-205       | 5.6E-12                            |
| Mn-53        | 1.5E-11                            | Pb-209       | 1.3E-08                            |
| Mn-54        | 2.8E-13                            | Pb-210       | 2.8E-15                            |
| Mn-56        | 2.9E-10                            | Pb-211       | 1.4E-10                            |
| Mo-93        | 1.1E-12                            | Pb-212       | 6.3E-12                            |
| Mo-99        | 1.4E-11                            | Pb-214       | 1.2E-10                            |
| Mo-101       | 1.0E-09                            | Pd-103       | 3.8E-11                            |
| Na-22        | 2.6E-14                            | Pd-107       | 3.1E-11                            |
| Na-24        | 2.6E-11                            | Pd-109       | 4.8E-10                            |
| Nb-90        | 2.6E-11                            | Pm-143       | 9.1E-13                            |
| Nb-93m       | 1.0E-11                            | Pm-144       | 1.3E-13                            |
| Nb-94        | 7.1E-15                            | Pm-145       | 6.2E-13                            |
| Pm-146       | 5.3E-14                            | Re-184m      | 3.7E-13                            |
| Pm-147       | 1.1E-11                            | Re-186       | 1.8E-11                            |
| Pm-148       | 5.0E-12                            | Re-187       | 2.6E-10                            |
| Pm-148m      | 6.7E-13                            | Re-188       | 1.7E-10                            |
| Pm-149       | 4.2E-11                            | Rh-103m      | 2.1E-07                            |
| Pm-151       | 7.1E-11                            | Rh-105       | 1.3E-10                            |
| Po-210       | 7.1E-15                            | Ru-97        | 6.7E-11                            |
| Pr-142       | 1.1E-10                            | Ru-103       | 2.6E-12                            |
| Pr-143       | 7.1E-12                            | Ru-105       | 2.8E-10                            |
| Pr-144       | 1.8E-08                            | Ru-106       | 3.4E-13                            |
| Pt-191       | 4.3E-11                            | S-35         | 1.3E-12                            |
| Pt-193       | 1.8E-11                            | Sb-117       | 2.4E-09                            |
| Pt-193m      | 4.8E-11                            | Sb-122       | 1.4E-11                            |
| Pt-195m      | 3.2E-11                            | Sb-124       | 5.3E-13                            |
| Pt-197       | 4.0E-10                            | Sb-125       | 1.6E-13                            |
| Pt-197m      | 2.6E-09                            | Sb-126       | 1.4E-12                            |
| Pu-236       | 5.9E-15                            | Sb-126m      | 9.1E-10                            |
| Pu-237       | 1.9E-11                            | Sb-127       | 7.1E-12                            |
| Pu-238       | 2.1E-15                            | Sb-129       | 7.7E-11                            |
| Pu-239       | 2.0E-15                            | Sc-44        | 1.7E-10                            |
| Pu-240       | 2.0E-15                            | Sc-46        | 4.2E-13                            |
| Pu-241       | 1.0E-13                            | Sc-47        | 3.8E-11                            |

TABLE 2—CONCENTRATION LEVELS FOR ENVIRONMENTAL COMPLIANCE—Continued

| Radionuclide | Concentration (Ci/m <sup>3</sup> ) | Radionuclide | Concentration (Ci/m <sup>3</sup> ) |
|--------------|------------------------------------|--------------|------------------------------------|
| Pu-242       | 2.0E-15                            | Sc-48        | 9.1E-12                            |
| Pu-243       | 4.2E-09                            | Sc-49        | 1.2E-08                            |
| Pu-244       | 2.0E-15                            | Se-73        | 1.7E-10                            |
| Pu-245       | 2.1E-10                            | Se-75        | 1.7E-13                            |
| Pu-246       | 2.2E-12                            | Se-79        | 1.1E-13                            |
| Ra-223       | 4.2E-14                            | Si-31        | 5.6E-09                            |
| Ra-224       | 1.5E-13                            | Si-32        | 3.4E-14                            |
| Ra-225       | 5.0E-14                            | Sm-147       | 1.4E-14                            |
| Ra-226       | 3.3E-15                            | Sm-151       | 2.1E-11                            |
| Ra-228       | 5.9E-15                            | Sm-153       | 5.9E-11                            |
| Rb-81        | 5.0E-10                            | Sn-113       | 1.4E-12                            |
| Rb-83        | 3.4E-13                            | Sn-117m      | 5.6E-12                            |
| Rb-84        | 3.6E-13                            | Sn-119m      | 5.3E-12                            |
| Rb-86        | 5.6E-13                            | Sn-123       | 1.1E-12                            |
| Rb-87        | 1.6E-13                            | Sn-125       | 1.7E-12                            |
| Rb-88        | 2.1E-09                            | Sn-126       | 5.3E-15                            |
| Rb-89        | 7.1E-10                            | Sr-82        | 6.2E-13                            |
| Re-184       | 1.5E-12                            | Sr-85        | 1.8E-12                            |
| Sr-85m       | 1.6E-09                            | Th-232       | 6.2E-16                            |
| Sr-87m       | 1.4E-09                            | Th-234       | 2.2E-12                            |
| Sr-89        | 1.8E-12                            | Ti-44        | 6.2E-15                            |
| Sr-90        | 1.9E-14                            | Ti-45        | 4.8E-10                            |
| Sr-91        | 9.1E-11                            | Ti-200       | 4.5E-11                            |
| Sr-92        | 2.9E-10                            | Ti-201       | 1.0E-10                            |
| Ta-182       | 4.5E-13                            | Ti-202       | 5.0E-12                            |
| Tb-157       | 2.5E-12                            | Ti-204       | 1.2E-12                            |
| Tb-160       | 7.7E-13                            | Tm-170       | 3.3E-12                            |
| Tc-95        | 1.0E-10                            | Tm-171       | 2.6E-11                            |
| Tc-95m       | 1.4E-12                            | U-230        | 1.5E-14                            |
| Tc-96        | 5.6E-12                            | U-231        | 4.2E-11                            |
| Tc-96m       | 6.7E-10                            | U-232        | 1.3E-15                            |
| Tc-97        | 7.1E-13                            | U-233        | 7.1E-15                            |
| Tc-97m       | 7.1E-12                            | U-234        | 7.7E-15                            |
| Tc-98        | 6.7E-15                            | U-235        | 7.1E-15                            |
| Tc-99        | 1.4E-13                            | U-236        | 7.7E-15                            |
| Tc-99m       | 1.7E-09                            | U-237        | 1.0E-11                            |
| Tc-101       | 4.5E-09                            | U-238        | 8.3E-15                            |
| Te-121       | 1.0E-12                            | U-239        | 4.3E-09                            |
| Te-121m      | 1.2E-13                            | U-240        | 1.3E-10                            |
| Te-123       | 1.4E-13                            | V-48         | 1.0E-12                            |
| Te-123m      | 2.0E-13                            | V-49         | 1.6E-10                            |
| Te-125m      | 3.6E-13                            | W-181        | 6.7E-12                            |
| Te-127       | 1.0E-09                            | W-185        | 2.6E-12                            |
| Te-127m      | 1.5E-13                            | W-187        | 7.7E-11                            |
| Te-129       | 7.7E-09                            | W-188        | 5.3E-13                            |
| Te-129m      | 1.4E-13                            | Xe-122       | 9.1E-11                            |
| Te-131       | 9.1E-11                            | Xe-123       | 1.6E-09                            |
| Te-131m      | 1.0E-12                            | Xe-125       | 1.1E-11                            |
| Te-132       | 7.1E-13                            | Xe-127       | 8.3E-09                            |
| Te-133       | 9.1E-10                            | Xe-129m      | 9.1E-08                            |
| Te-133m      | 2.2E-10                            | Xe-131m      | 2.6E-07                            |
| Te-134       | 5.3E-10                            | Xe-133       | 6.2E-08                            |
| Th-226       | 3.4E-11                            | Xe-133m      | 7.1E-08                            |
| Th-227       | 3.8E-14                            | Xe-135       | 9.1E-09                            |
| Th-228       | 3.1E-15                            | Xe-135m      | 5.0E-09                            |
| Th-229       | 5.3E-16                            | Xe-138       | 1.2E-09                            |
| Th-230       | 3.4E-15                            | Y-86         | 3.0E-11                            |
| Th-231       | 2.9E-10                            | Y-87         | 1.7E-11                            |
| Y-88         | 2.7E-13                            | Zn-65        | 9.1E-14                            |
| Y-90         | 1.3E-11                            | Zn-69        | 3.2E-08                            |
| Y-90m        | 1.9E-10                            | Zn-69m       | 1.7E-10                            |
| Y-91         | 2.1E-12                            | Zr-86        | 2.4E-11                            |
| Y-91m        | 1.3E-09                            | Zr-88        | 3.1E-13                            |
| Y-92         | 8.3E-10                            | Zr-89        | 1.3E-11                            |
| Y-93         | 2.9E-10                            | Zr-93        | 2.6E-12                            |
| Yb-169       | 3.7E-12                            | Zr-95        | 6.7E-13                            |
| Yb-175       | 4.3E-11                            | Zr-97        | 3.8E-11                            |
| Zn-62        | 9.1E-11                            |              |                                    |

## 6. References

(1) Environmental Protection Agency, "A Guide for Determining Compliance with the Clean Air Act Standards for Radionuclides Emissions from NRC-Licensed and Non-DOE Federal Facilities", EPA 520/1-89-002, October 1989.

(2) Environmental Protection Agency, "User's Guide for the COMPLY Code", EPA 520/1-89-003, October 1989.

(3) Environmental Protection Agency, "Background Information Document: Procedures Approved for Demonstrating Compliance with 40 CFR Part 61, Subpart I", EPA 520/1-89-001, January 1989.

(4) National Council on Radiation Protection and Measurement, "Screening Techniques for Determining Compliance with Environmental Standards" NCRP Commentary No. 3, Revision of January 1989 with addendum of October, 1989.

[54 FR 51711, Dec. 15, 1989]

## PART 62—APPROVAL AND PROMULGATION OF STATE PLANS FOR DESIGNATED FACILITIES AND POLLUTANTS

### Subpart A—General Provisions

Sec.

- 62.01 Definitions.
- 62.02 Introduction.
- 62.03 Extensions.
- 62.04 Approval status.
- 62.05 Legal authority.
- 62.06 Negative declarations.
- 62.07 Emissions standards, compliance schedules.
- 62.08 Emission inventories and source surveillance.
- 62.09 Revision of plans by Administrator.
- 62.10 Submission to Administrator.
- 62.11 Severability.
- 62.12 Availability of applicable plans.

### Subpart B—Alabama

PLAN FOR THE CONTROL OF DESIGNATED POLLUTANTS FROM EXISTING FACILITIES (SECTION 111(d) PLAN)

62.100 Identification of plan.

SULFURIC ACID MIST FROM EXISTING SULFURIC ACID PLANTS

62.101 Identification of sources.

FLUORIDE EMISSIONS FROM PHOSPHATE FERTILIZER PLANTS

62.102 Identification of sources.

### Subpart C—Alaska

FLUORIDE EMISSIONS FROM PHOSPHATE FERTILIZER PLANTS

62.350 Identification of plan—negative declaration.

ACID MIST FROM SULFURIC ACID PLANTS

62.351 Identification of plan—negative declaration.

TOTAL REDUCED SULFUR EMISSIONS FROM KRAFT PULP MILLS

62.352 Identification of plan—negative declaration.

FLUORIDE EMISSIONS FROM PRIMARY ALUMINUM REDUCTION PLANTS

62.353 Identification of plan—negative declaration.

### Subpart D—[Reserved]

### Subpart E—Arkansas

PLAN FOR THE CONTROL OF DESIGNATED POLLUTANTS FROM EXISTING FACILITIES (SECTION 111(d) PLAN)

62.850 Identification of plan.

62.852 Emission inventories, source surveillance, reports.

FLUORIDE EMISSIONS FROM EXISTING PHOSPHATE FERTILIZER PLANTS

62.854 Identification of sources.

SULFURIC ACID MIST EMISSIONS FROM EXISTING SULFURIC ACID PLANTS

62.855 Identification of sources.

TOTAL REDUCED SULPHUR EMISSIONS FROM EXISTING KRAFT PULP MILLS

62.865 Identification of sources.

62.866 Compliance schedule.

### Subpart F—Plan for the Control of Designated Pollutants From Existing Facilities (Section 111(d) Plan)

62.1100 Identification of plan.

FLUORIDE EMISSIONS FROM EXISTING PHOSPHATE FERTILIZER PLANTS

62.1101 Identification of sources.

SULFURIC ACID MIST EMISSIONS FROM EXISTING SULFURIC ACID PRODUCTION UNITS

62.1102 Identification of sources.

FLUORIDE EMISSIONS FROM PRIMARY ALUMINUM REDUCTION PLANTS

62.1103 Identification of plan—negative declaration.

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TOTAL REDUCED SULPHUR EMISSIONS FROM EXISTING KRAFT PULP MILLS

62.1104 Identification of sources.

**Subpart G—[Reserved]**

**Subpart H—Connecticut**

FLUORIDE EMISSIONS FROM PHOSPHATE FERTILIZER PLANTS

62.1600 Identification of plan—negative declaration.

SULFURIC ACID MIST EMISSIONS FROM SULFURIC ACID PRODUCTION UNITS

62.1625 Identification of plan—negative declaration.

TOTAL REDUCED SULFUR EMISSIONS FROM EXISTING KRAFT PULP MILLS

62.1650 Identification of plan—negative declaration.

FLUORIDE EMISSIONS FROM EXISTING PRIMARY ALUMINUM PLANTS

62.1700 Identification of plan—negative declaration.

**Subpart I—Delaware**

FLUORIDE EMISSIONS FROM PHOSPHATE FERTILIZER PLANTS

62.1850 Identification of plan—negative declaration.

SULFURIC ACID MIST FROM EXISTING SULFURIC ACID PLANTS

62.1875 Identification of plan.

TOTAL REDUCED SULFUR EMISSIONS FROM EXISTING KRAFT PULP MILLS

62.1900 Identification of plan—negative declaration.

FLUORIDE EMISSIONS FROM PRIMARY ALUMINUM REDUCTION PLANTS

62.1925 Identification of plan—negative declaration.

**Subpart J—District of Columbia**

FLUORIDE EMISSIONS FROM PHOSPHATE FERTILIZER PLANTS

62.2100 Identification of plan—negative declaration.

SULFURIC ACID MIST EMISSIONS FROM EXISTING SULFURIC ACID PLANTS

62.2101 Identification of plan—negative declaration.

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TOTAL REDUCED SULFUR EMISSIONS FROM EXISTING KRAFT PULP MILLS

62.2110 Identification of plan—negative declaration.

FLUORIDE EMISSIONS FROM EXISTING PRIMARY ALUMINUM PLANTS

62.2120 Identification of plan—negative declaration.

**Subpart K—Florida**

PLAN FOR THE CONTROL OF DESIGNATED POLLUTANTS FROM EXISTING FACILITIES (SECTION 111(d) PLAN)

62.2350 Identification of plan.

SULFURIC ACID MIST FROM EXISTING SULFURIC ACID PLANTS

62.2351 Identification of sources.

FLUORIDE EMISSIONS FROM PRIMARY ALUMINUM REDUCTION PLANTS

62.2352 Identification of source—negative declaration.

TOTAL REDUCED SULFUR EMISSIONS FROM KRAFT PULP MILLS AND TALL OIL PLANTS

62.2353 Identification of sources.

62.2354 Compliance schedules.

**Subpart L—Georgia**

PLAN FOR THE CONTROL OF DESIGNATED POLLUTANTS FROM EXISTING FACILITIES (SECTION 111(d) PLAN)

62.2600 Identification of plan.

SULFURIC ACID MIST FROM EXISTING SULFURIC ACID PLANTS

62.2601 Identification of sources.

FLUORIDE EMISSIONS FROM PHOSPHATE FERTILIZER PLANTS

62.2602 Identification of sources—Negative declaration.

TOTAL REDUCED SULFUR EMISSIONS FROM KRAFT PULP MILLS

62.2603 Identification of sources.

62.2604 [Reserved]

FLUORIDE EMISSIONS FROM EXISTING PRIMARY ALUMINUM REDUCTION PLANTS

62.2605 Identification of sources—Negative declaration.

**Environmental Protection Agency**

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**Subpart M—[Reserved]**

**Subpart N—Idaho**

FLUORIDE EMISSIONS FROM EXISTING PRIMARY ALUMINUM PLANTS

62.3100 Identification of plan—negative declaration.

**Subpart O—Illinois**

SULFURIC ACID MIST EMISSIONS FROM EXISTING SULFURIC ACID PRODUCTION PLANTS

62.3300 Identification of plan.

TOTAL REDUCED SULFUR EMISSIONS FROM KRAFT PULP MILLS

62.3325 Identification of plan—negative declaration.

**Subpart P—Indiana**

FLUORIDE EMISSIONS FROM PHOSPHATE FERTILIZER PLANTS

62.3600 Identification of plan—negative declaration.

FLUORIDE EMISSIONS FROM EXISTING PRIMARY ALUMINUM PLANTS

62.3625 Identification of plan.

**Subpart Q—Iowa**

PLAN FOR THE CONTROL OF DESIGNATED POLLUTANTS FROM EXISTING FACILITIES (SECTION 111(d) PLAN)

62.3850 Identification of plan.

SULFURIC ACID MIST FROM EXISTING SULFURIC ACID PRODUCTION PLANTS

62.3851 Identification of sources.

FLUORIDE EMISSIONS FROM EXISTING PHOSPHATE FERTILIZER PLANTS

62.3852 Identification of source.

TOTAL REDUCED SULFUR EMISSIONS FROM EXISTING KRAFT PULP MILLS

62.3853 Identification of plan—negative declaration.

FLUORIDE EMISSIONS FROM EXISTING PRIMARY ALUMINUM REDUCTION PLANTS

62.3854 Identification of plan—negative declaration.

TOTAL REDUCED SULFUR EMISSIONS FROM EXISTING KRAFT PULP MILLS

62.3910 Identification of plan—negative declaration.

EMISSIONS FROM EXISTING MUNICIPAL WASTE COMBUSTORS WITH THE CAPACITY TO BURN GREATER THAN 250 TONS PER DAY OF MUNICIPAL SOLID WASTE

62.3911 Identification of plan—negative declaration.

**Subpart R—Kansas**

FLUORIDE EMISSIONS FROM EXISTING PHOSPHATE FERTILIZER PLANTS

62.4100 Identification of plan—negative declaration.

TOTAL REDUCED SULFUR EMISSIONS FROM EXISTING KRAFT PULP MILLS

62.4125 Identification of plan—negative declaration.

FLUORIDE EMISSIONS FROM EXISTING PRIMARY ALUMINUM REDUCTION PLANTS

62.4150 Identification of plan—negative declaration.

SULFURIC ACID MIST FROM EXISTING SULFURIC ACID PRODUCTION PLANTS

62.4175 Identification of plan.

EMISSIONS FROM EXISTING MUNICIPAL WASTE COMBUSTORS WITH THE CAPACITY TO BURN GREATER THAN 250 TONS PER DAY OF MUNICIPAL SOLID WASTE

62.4176 Identification of plan—negative declaration.

**Subpart S—Kentucky**

PLAN FOR THE CONTROL OF DESIGNATED POLLUTANTS FROM EXISTING FACILITIES (SECTION 111(d) PLAN)

62.4350 Identification of plan.

SULFURIC ACID MIST FROM EXISTING SULFURIC ACID PLANTS

62.4351 Identification of sources.

TOTAL REDUCED SULFUR FROM EXISTING KRAFT PULP MILLS

62.4352 Identification of sources.

FLUORIDE EMISSIONS FROM EXISTING PRIMARY ALUMINUM REDUCTION PLANTS

62.4353 Identification of sources.

FLUORIDE EMISSIONS FROM PHOSPHATE FERTILIZER PLANTS

62.4354 Identification of plan—negative declaration.

**Subpart T—Louisiana**

## PLAN FOR CONTROL OF DESIGNATED POLLUTANTS FROM EXISTING FACILITIES (SECTION 111(d) PLAN)

- 62.4620 Identification of plan.
- 62.4621 Emission standards and compliance schedules.
- 62.4622 Emission inventories, source surveillance, reports.
- 62.4623 Legal authority.

## SULFURIC ACID MIST FROM EXISTING SULFURIC ACID PLANTS

- 62.4624 Identification of sources.

## FLUORIDE EMISSIONS FROM EXISTING PHOSPHATE FERTILIZER PLANTS

- 62.4625 Identification of sources.
- 62.4626 Effective date.

## FLUORIDE EMISSIONS FROM EXISTING PRIMARY ALUMINUM PLANTS

- 62.4627 Identification of sources.
- 62.4628 Effective date.

## TOTAL REDUCED SULFUR EMISSIONS FROM EXISTING KRAFT PULP MILLS

- 62.4629 Identification of sources.
- 62.4630 Effective date.

**Subpart U—Maine**

## PLAN FOR THE CONTROL OF DESIGNATED POLLUTANTS FROM EXISTING FACILITIES (SECTION 111(d) PLAN)

- 62.4845 Identification of plan.
- FLUORIDE EMISSIONS FROM EXISTING PRIMARY ALUMINUM PLANTS
- 62.4875 Identification of sources—negative declaration.

## SULFURIC ACID MIST FROM EXISTING SULFURIC ACID PLANTS

- 62.4900 Identification of sources.

## TOTAL REDUCED SULFUR FROM EXISTING KRAFT PULP MILLS

- 62.4925 Identification of sources.

## FLUORIDE EMISSIONS FROM PHOSPHATE FERTILIZER PLANTS

- 62.4950 Identification of plan—negative declaration.

**Subpart V—Maryland**

## PLAN FOR CONTROL OF DESIGNATED POLLUTANTS FROM EXISTING FACILITIES (SECTION 111(d) PLAN)

- 62.5100 Identification of plan.

## SULFURIC ACID MIST FROM EXISTING SULFURIC ACID PLANTS

- 62.5101 Identification of sources.

## TOTAL REDUCED SULFUR EMISSIONS FROM EXISTING KRAFT PULP MILLS

- 62.5102 Identification of sources.

## FLUORIDE EMISSIONS FROM PRIMARY ALUMINUM REDUCTION PLANTS

- 62.5103 Identification of sources.

**Subpart W—Massachusetts**

## FLUORIDE EMISSIONS FROM PHOSPHATE FERTILIZER PLANTS

- 62.5350 Identification of plan—negative declaration.

## SULFURIC ACID MIST EMISSIONS FROM EXISTING SULFURIC ACID PLANTS

- 62.5351 Identification of plan—negative declaration.

## TOTAL REDUCED SULFUR EMISSIONS FROM EXISTING KRAFT PULP MILLS

- 62.5375 Identification of plan—negative declaration.

## FLUORIDE EMISSIONS FROM EXISTING PRIMARY ALUMINUM PLANTS

- 62.5400 Identification of plan—negative declaration.

**Subpart X—Michigan**

## FLUORIDE EMISSIONS FROM PHOSPHATE FERTILIZER PLANTS

- 62.5600 Identification of plan—negative declaration.

**Subpart Y—Minnesota**

## FLUORIDE EMISSIONS FROM PHOSPHATE FERTILIZER PLANTS

- 62.5850 Identification of plan—negative declaration.

**Subpart Z—Mississippi**

## PLAN FOR THE CONTROL OF DESIGNATED POLLUTANTS FROM EXISTING FACILITIES (SECTION 111(d) PLAN)

- 62.6100 Identification of plan.

## SULFURIC ACID MIST FROM EXISTING SULFURIC ACID PLANTS

- 62.6110 Identification of sources.

## FLUORIDE EMISSIONS FROM PHOSPHATE FERTILIZER PLANTS

- 62.6120 Identification of sources.

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FLUORIDE EMISSIONS FROM PRIMARY ALUMINUM PLANTS

62.6121 Identification of sources—negative declaration.

TOTAL REDUCED SULFUR EMISSIONS FROM KRAFT PULP MILLS

62.6122 Identification of sources.

MUNICIPAL WASTE COMBUSTORS

62.6123 Identification of sources—Negative declaration.

**Subpart AA—Missouri**

PLAN FOR THE CONTROL OF DESIGNATED POLLUTANTS FROM EXISTING FACILITIES (SECTION 111(d) PLAN)

62.6350 Identification of plan.

FLUORIDE EMISSIONS FROM EXISTING PHOSPHATE FERTILIZER PLANTS

62.6351 Identification of sources.

FLUORIDE EMISSIONS FROM EXISTING PRIMARY ALUMINUM REDUCTION PLANTS

62.6352 Identification of sources.

SULFURIC ACID MIST FROM EXISTING SULFURIC ACID PRODUCTION PLANTS

62.6353 Identification of sources.

TOTAL REDUCED SULFUR EMISSIONS FROM EXISTING KRAFT PULP MILLS

62.6354 Identification of plan—negative declaration.

EMISSIONS FROM EXISTING MUNICIPAL WASTE COMBUSTORS WITH THE CAPACITY TO BURN GREATER THAN 250 TONS PER DAY OF MUNICIPAL SOLID WASTE

62.6355 Identification of plan—negative declaration.

**Subpart BB—[Reserved]**

**Subpart CC—Nebraska**

FLUORIDE EMISSIONS FROM EXISTING PHOSPHATE FERTILIZER PLANTS

62.6850 Identification of plan—negative declaration.

SULFURIC ACID MIST EMISSIONS FROM EXISTING SULFURIC ACID PLANTS

62.6875 Identification of plan—negative declaration.

TOTAL REDUCED SULFUR EMISSIONS FROM EXISTING KRAFT PULP MILLS

62.6880 Identification of plan—negative declaration.

FLUORIDE EMISSIONS FROM EXISTING PRIMARY ALUMINUM REDUCTION PLANTS

62.6910 Identification of plan—negative declaration.

EMISSIONS FROM EXISTING MUNICIPAL WASTE COMBUSTORS WITH THE CAPACITY TO BURN GREATER THAN 250 TONS PER DAY OF MUNICIPAL SOLID WASTE

62.6911 Identification of plan—negative declaration.

**Subpart DD—[Reserved]**

**Subpart EE—New Hampshire**

PLAN FOR THE CONTROL OF DESIGNATED POLLUTANTS FROM EXISTING FACILITIES (SECTION 111(d) PLAN)

62.7325 Identification of plan.

FLUORIDE EMISSIONS FROM PHOSPHATE FERTILIZER PLANTS

62.7350 Identification of plan—negative declaration.

SULFURIC ACID MIST EMISSIONS FROM SULFURIC ACID PRODUCTION UNITS

62.7375 Identification of plan—negative declaration.

FLUORIDE EMISSIONS FROM EXISTING PRIMARY ALUMINUM PLANTS

62.7400 Identification of sources—negative declaration.

TOTAL REDUCED SULFUR FROM EXISTING KRAFT PULP MILLS

62.7425 Identification of sources.

**Subpart FF—New Jersey**

FLUORIDE EMISSIONS FROM PHOSPHATE FERTILIZER PLANTS

62.7600 Identification of plan—negative declaration.

TOTAL REDUCED SULFUR EMISSIONS FROM KRAFT PULP MILLS

62.7601 Identification of plan—negative declaration.

FLUORIDE EMISSIONS FROM PRIMARY ALUMINUM REDUCTION PLANTS

62.7602 Identification of plan—negative declaration.

**Subpart GG—New Mexico**

62.7850 Identification of plan.

SULFURIC ACID MIST EMISSIONS FROM SULFURIC ACID PLANTS

62.7851 Identification of sources.

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FLUORIDE EMISSIONS FROM PRIMARY  
ALUMINUM PLANTS

62.7852 Identification of plan—negative declaration.

TOTAL REDUCED SULFUR EMISSIONS FROM  
KRAFT PULP MILLS

62.7853 Identification of plan—negative declaration.

FLUORIDE EMISSIONS FROM POSPHATE  
FERTILIZER PLANTS

62.7854 Identification of plan—negative declaration

**Subpart HH—New York**

FLUORIDE EMISSIONS FROM PHOSPHATE  
FERTILIZER PLANTS

62.8100 Identification of plan—negative declaration.

SULFURIC ACID MIST EMISSIONS FROM  
EXISTING SULFURIC ACID PLANTS

62.8102 Identification of plan.

FLUORIDE EMISSIONS FROM EXISTING PRIMARY  
ALUMINUM PLANTS [RESERVED]

**Subpart II—North Carolina**

PLAN FOR THE CONTROL OF DESIGNATED POLLUTANTS FROM EXISTING FACILITIES (SECTION 111(d) PLAN)

62.8350 Identification of plan.

SULFURIC ACID MIST FROM EXISTING  
SULFURIC ACID PLANTS

62.8351 Identification of sources.

FLUORIDE EMISSIONS FROM EXISTING PRIMARY  
ALUMINUM PLANTS

62.8352 Identification of sources.

TOTAL REDUCED SULFUR EMISSIONS FROM  
KRAFT PULP MILLS

62.8353 Identification of sources.

**Subpart JJ—[Reserved]**

**Subpart KK—Ohio**

FLUORIDE EMISSIONS FROM PHOSPHATE  
FERTILIZER PLANTS

62.8850 Identification of plan—negative declaration.

TOTAL REDUCED SULFUR EMISSIONS FROM  
KRAFT PULP MILLS

62.8860 Identification of plan—disapproval.

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**Subpart LL—Oklahoma**

PLAN FOR THE CONTROL OF DESIGNATED POLLUTANTS FROM EXISTING FACILITIES (SECTION 111(d) PLAN)

62.9100 Identification of plan.

SULFURIC ACID MIST FROM EXISTING  
SULFURIC ACID PLANTS

62.9110 Identification of sources.

FLUORIDE EMISSIONS FROM PHOSPHATE  
FERTILIZER PLANTS

62.9120 Identification of plan—negative declaration.

FLUORIDE EMISSIONS FROM PRIMARY  
ALUMINUM PLANTS

62.9130 Identification of plan—negative declaration.

TOTAL REDUCED SULFUR FROM EXISTING  
KRAFT PULP MILLS

62.9140 Identification of source.

**Subpart MM—Oregon**

PLAN FOR THE CONTROL OF DESIGNATED POLLUTANTS FROM EXISTING FACILITIES (SECTION 111(d) PLAN)

62.9350 Identification of plan.

FLUORIDE EMISSIONS FROM EXISTING PRIMARY  
ALUMINUM PLANTS

62.9360 Identification of sources.

FLUORIDE EMISSIONS FROM PHOSPHATE  
FERTILIZER PLANTS

62.9500 Identification of sources.

SULFURIC ACID MIST EMISSIONS FROM  
SULFURIC ACID PRODUCTION UNITS

62.9501 Identification of sources.

**Subpart NN—Pennsylvania**

FLUORIDE EMISSIONS FROM PHOSPHATE  
FERTILIZER PLANTS

62.9600 Identification of plan—negative declaration.

SULFURIC ACID MIST EMISSIONS FROM  
EXISTING SULFURIC ACID PLANTS

62.9601 Identification of Plan.

TOTAL REDUCED SULFUR EMISSIONS FROM  
EXISTING KRAFT PULP MILLS

62.9610 Identification of plan—negative declaration.

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FLUORIDE EMISSIONS FROM EXISTING PRIMARY ALUMINUM PLANTS

62.9620 Identification of plan—negative declaration.

**Subpart OO—Rhode Island**

FLUORIDE EMISSIONS FROM PHOSPHATE FERTILIZER PLANTS

62.9850 Identification of plan—negative declaration.

SULFURIC ACID MIST EMISSIONS FROM SULFURIC ACID PRODUCTION UNITS

62.9875 Identification of plan—negative declaration.

TOTAL REDUCED SULFUR EMISSIONS FROM EXISTING KRAFT PULP MILLS

62.9900 Identification of plan—negative declaration.

FLUORIDE EMISSIONS FROM EXISTING PRIMARY ALUMINUM PLANTS

62.9950 Identification of plan—negative declaration.

MUNICIPAL WASTE COMBUSTOR EMISSIONS FROM EXISTING MUNICIPAL WASTE COMBUSTORS WITH THE CAPACITY TO COMBUST GREATER THAN 250 TONS PER DAY OF MUNICIPAL SOLID WASTE

62.9975 Identification of plan—negative declaration.

**Subpart PP—South Carolina**

PLAN FOR THE CONTROL OF DESIGNATED POLLUTANTS FROM EXISTING FACILITIES (SECTION 111(d) PLAN)

62.10100 Identification of plan.

SULFURIC ACID MIST FROM EXISTING SULFURIC ACID PLANTS

62.10110 Identification of sources.

TOTAL REDUCED SULFUR EMISSIONS FROM KRAFT PULP MILLS

62.10120 Identification of sources.

FLUORIDE EMISSIONS FROM PHOSPHATE FERTILIZER PLANTS

62.10130 Identification of plan—negative declaration.

FLUORIDE EMISSIONS FROM EXISTING PRIMARY ALUMINUM REDUCTION PLANTS

62.10140 Identification of plan—negative declaration.

**Subparts QQ—[Reserved]**

**Subparts RR—Tennessee**

FLUORIDE EMISSIONS FROM PHOSPHATE FERTILIZER PLANTS

62.10602 Identification of sources—negative declaration.

TOTAL REDUCED SULFUR EMISSIONS FROM EXISTING KRAFT PULP MILLS

62.10625 Identification of plan.

**Subpart SS—[Reserved]**

**Subpart TT—Utah**

FLUORIDE FROM EXISTING PHOSPHATE FERTILIZER PLANTS

62.11100 Identification of plan.

**Subpart UU—Vermont**

FLUORIDE EMISSIONS FROM PHOSPHATE FERTILIZER PLANTS

62.11350 Identification of plan—negative declaration.

SULFURIC ACID MIST EMISSIONS FROM SULFURIC ACID PRODUCTION UNITS

62.11375 Identification of plan—negative declaration.

TOTAL REDUCED SULFUR EMISSIONS FROM EXISTING KRAFT PULP MILLS

62.11400 Identification of plan—negative declaration.

FLUORIDE EMISSIONS FROM EXISTING PRIMARY ALUMINUM PLANTS

62.11425 Identification of plan—negative declaration.

MUNICIPAL WASTE COMBUSTOR EMISSIONS FROM EXISTING MUNICIPAL WASTE COMBUSTORS WITH THE CAPACITY TO COMBUST GREATER THAN 250 TONS PER DAY OF MUNICIPAL SOLID WASTE

62.11450 Identification of plan—negative declaration.

**Subpart VV—Virginia**

FLUORIDE EMISSIONS FROM PHOSPHATE FERTILIZER PLANTS

62.11600 Identification of plan—negative declaration.

SULFURIC ACID MIST EMISSIONS FROM EXISTING SULFURIC ACID PLANTS

62.11601 Identification of plan.

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TOTAL REDUCED SULFUR EMISSIONS FROM EXISTING KRAFT PULP MILLS

62.11610—62.11619 [Reserved—plan not submitted]

FLUORIDE EMISSIONS FROM EXISTING PRIMARY ALUMINUM PLANTS

62.11620 Identification of plan—negative declaration.

Subpart WW—Washington

FLUORIDE EMISSIONS FROM PHOSPHATE FERTILIZER PLANTS

62.11850 Identification of plan—negative declaration.

Subpart XX—West Virginia

FLUORIDE EMISSIONS FROM PHOSPHATE FERTILIZER PLANTS

62.12100 Identification of plan—negative declaration.

Subpart YY—Wisconsin

FLUORIDE EMISSIONS FROM PHOSPHATE FERTILIZER PLANTS

62.12350 Identification of plan—negative declaration.

Subparts ZZ—AAA—[Reserved]

Subpart BBB—Puerto Rico

FLUORIDE EMISSIONS FROM PHOSPHATE FERTILIZER PLANTS

62.13100 Identification of plan—negative declaration.

SULFURIC ACID MIST EMISSIONS FROM SULFURIC ACID PRODUCTION PLANTS

62.13101 Identification of plan—negative declaration.

FLUORIDE EMISSIONS FROM PRIMARY ALUMINUM REDUCTION PLANTS

62.13102 Identification of plan—negative declaration.

TOTAL REDUCED SULFUR FROM KRAFT PULP MILLS

62.13103 Identification of plan—negative declaration.

Subpart CCC—Virgin Islands

FLUORIDE EMISSIONS FROM PHOSPHATE FERTILIZER PLANTS

62.13350 Identification of plan—negative declaration.

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SULFURIC ACID MIST EMISSIONS FROM SULFURIC ACID PRODUCTION PLANTS

62.13351 Identification of plan—negative declaration.

TOTAL REDUCED SULFUR EMISSIONS FROM KRAFT PULP MILLS

62.13352 Identification of plan—negative declaration.

FLUORIDE EMISSIONS FROM PRIMARY ALUMINUM REDUCTION PLANTS

62.13353 Identification of plan—negative declaration.

AUTHORITY: 42 U.S.C. 7413 and 7601.

SOURCE: 43 FR 51393, Nov. 3, 1978, unless otherwise noted.

Subpart A—General Provisions

§ 62.01 Definitions.

As used in this part, all terms not defined herein shall have the meaning given to them in the Clean Air Act and in part 60 of this chapter.

§ 62.02 Introduction.

(a) This part sets forth the Administrator's approval and disapproval of State plans for control of designated pollutants and facilities, and the Administrator's promulgation of such plans or portions thereof. Approval of a plan or any portion of a plan is based on a determination by the Administrator that it meets the requirements of section 111(d) of the act and the provisions of part 60 of this chapter.

(b) If a State does not submit a complete, approvable plan, the Administrator may then promulgate a substitute plan or part of a plan. The promulgated provision, plus the approved parts of the State plan, constitute the applicable plan for purposes of the act.

(c) The Administrator will promulgate substitute provisions for the disapproved regulatory provisions only. If a nonregulatory provision is disapproved, however, it will be noted in this part and a detailed explanation will be sent to the State.

(d) All approved regulatory provisions of each plan are incorporated by reference in this part. Section 62.12 provides information on availability of applicable plans. The Administrator and State and local agencies shall enforce (1) regulatory provisions of a plan

approved or promulgated by the Administrator, and (2) all permit conditions or denials issued in carrying out the approved or promulgated regulations for the review of designated facilities.

(e) Each State's plan is dealt with in a separate subpart, with separate headings for different pollutants and facilities. The plans shall include an introductory section identifying the plan by name and the date of its submittal. Additional sections are included as necessary to specifically identify disapproved provisions, to set forth reasons for disapproval, and to set forth provisions of the plan promulgated by the Administrator. Except as otherwise specified, all supplemental information submitted to the Administrator with respect to any plan has been submitted by the Governor of the State.

(f) Revisions to applicable plans will be included in this part when approved or promulgated by the Administrator.

#### **§ 62.03 Extensions.**

The Administrator may, whenever he determines necessary, extend the period for submission of any plan or plan revision or portion thereof.

#### **§ 62.04 Approval status.**

The approval status of each State's plan or portions thereof, are set forth in each subpart. All plans are approved unless specifically disapproved in the appropriate subpart.

#### **§ 62.05 Legal authority.**

(a) The Administrator's determination of the absence or inadequacy of legal authority required to be included in the plan is set forth in each subpart. This includes the legal authority of local agencies and State governmental agencies other than an air pollution control agency if such other agencies are assigned responsibility for carrying out a plan or portion thereof.

(b) No legal authority as such is promulgated by the Administrator. Where required regulatory provisions are not included in the plan by the State because of inadequate authority, substitute provisions are promulgated by the Administrator.

#### **§ 62.06 Negative declarations.**

A State may submit to the Administrator a letter certifying that no designated facilities exist in the State if such is the case. The negative declaration will be in lieu of a plan.

#### **§ 62.07 Emission standards, compliance schedules.**

(a) In each subpart, emission standards and compliance schedules which have been disapproved by the Administrator are identified, and those promulgated by the Administrator are set forth.

(b) The Administrator's approval or promulgation of any compliance schedule shall not affect the responsibility of the owner or operator to comply with any applicable emission limitation on or after the date for final compliance specified in the applicable schedule.

#### **§ 62.08 Emission inventories and source surveillance.**

(a) Each subpart identifies the plan provisions for source surveillance which are disapproved, and sets forth the Administrator's promulgation of necessary provisions for requiring designated sources to maintain records, make reports, and submit information.

(b) The Administrator will not promulgate provisions for disapproved State or local agency procedures for testing, inspection, investigation, or detection. However, detailed critiques of such portions will be provided to the State.

#### **§ 62.09 Revision of plans by Administrator.**

After notice and opportunity for public hearing in each affected State, the Administrator may revise any provision of an applicable plan if:

(a) The provision was promulgated by the Administrator and

(b) The plan, as revised, will be consistent with the Act and with the requirements of part 60, subpart B of this chapter.

**§ 62.10 Submission to Administrator.**

Except as otherwise provided in § 60.23 of this chapter, all requests, reports, applications, submittals, and other communications to the Administrator pursuant to this part shall be submitted in duplicate and addressed to the appropriate Regional Office of the Environmental Protection Agency, to the attention of the Director, Air and Hazardous Materials Division (Environmental Programs Division in Region II). The Regional Offices are as follows:

| Region and jurisdiction covered   | Address  |
|---|--|
| I—Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont.                      | JFK Federal Building, Boston, Mass. 02203.                       |
| II—New York, New Jersey, Puerto Rico, Virgin Islands.   | Federal Office Building, 26 Federal Plaza, New York, N.Y. 10007. |
| III—Delaware, District of Columbia, Pennsylvania, Maryland, Virginia, West Virginia.            | Curtis Building, 6th and Walnut Sts., Philadelphia, Pa. 19106.   |
| IV—Alabama, Florida, Georgia, Mississippi, Kentucky, North Carolina, South Carolina, Tennessee. | 345 Courtland NE., Atlanta, Ga. 30308.                           |
| V—Illinois, Indiana, Michigan, Minnesota, Ohio, Wisconsin.                                      | Federal Building, 230 South Dearborn St., Chicago, Ill. 60606.   |
| VI—Arkansas, Louisiana, New Mexico, Oklahoma, Texas.  | 1st International Building, 1201 Elm St., Dallas, Tex. 75270.    |
| VII—Iowa, Kansas, Missouri, Nebraska.   | 1735 Baltimore St., Kansas City, Mo. 64108.                      |
| VIII—Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming.                              | 916 Lincoln Towers, 1860 Lincoln St., Denver, Colo. 80203.       |
| IX—Arizona, California, Hawaii, Nevada, Guam, American Samoa.                                   | 215 Fremont St., San Francisco, Calif. 94105.                    |
| X—Washington, Oregon, Idaho, Alaska.  | 1200 6th Ave., Seattle, Wash. 98101.                             |

**§ 62.11 Severability.**

The provisions promulgated in this part and the various applications thereof are distinct and severable. If any provision of this part or the application thereof to any person or circumstances is held invalid, such invalidity shall not affect other provisions or application of such provision to other persons or circumstances which can be given effect without the invalid provision or application.

**§ 62.12 Availability of applicable plans.**

Copies of the applicable plans will be available for public inspection at the following locations:

(a) The offices of the Directors, Air and Hazardous Materials Divisions at EPA Regional Offices I, III-X, and the Director, Environmental Programs Division at EPA Regional Office II. The addresses and jurisdictions covered by these appear in § 62.10.

(b) Public Information Reference Unit, Library Systems Branch, EPA (PM 213), 401 M Street SW., Washington, D.C. 20460.

**Subpart B—Alabama**

AUTHORITY: Sec. 110(a) and 111(d), Clean Air Act (42 U.S.C. 7410(a) and 7411(d)).

SOURCE: 48 FR 31402, July 8, 1983, unless otherwise noted.

**PLAN FOR THE CONTROL OF DESIGNATED POLLUTANTS FROM EXISTING FACILITIES (SECTION 111(d) PLAN)**

**§ 62.100 Identification of plan.**

(a) *Identification of plan.* Alabama Designated Facility Plan (Section 111(d) Plan).

(b) *The plan was officially submitted as follows.* (1) Control of sulfuric acid mist emissions from existing sulfuric acid production units, submitted on May 18, 1980;

(2) Control of fluoride emissions from existing phosphate fertilizer plants, submitted on April 10, 1978.

(c) *Designated facilities.* The plan applies to existing facilities in the following categories of sources:

- (1) Sulfuric acid plants;
- (2) Phosphate fertilizer plants.

**SULFURIC ACID MIST FROM EXISTING SULFURIC ACID PLANTS**

**§ 62.101 Identification of sources.**

The plan applies to existing facilities at the following sulfuric acid plants:

- (a) Acid plants operated by
  - (1) Reichhold Chemical Company in Tuscaloosa,
  - (2) Stauffer Chemical Company in Mobile, and
  - (3) Estech Chemical in Dothan.
- (b) There are no oleum plants.
- (c) There are not sulfur-burning plants.
- (d) There are no bound sulfur feedstock plants.

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FLUORIDE EMISSIONS FROM PHOSPHATE FERTILIZER PLANTS

Subpart D—[Reserved]

§ 62.102 Identification of sources.

The plan currently does not identify any sources subject to its fluoride emission limits.

Subpart E—Arkansas

SOURCE: 47 FR 20491, May 12, 1982, unless otherwise noted.

Subpart C—Alaska

SOURCE: 44 FR 76281, Dec. 26, 1979, unless otherwise noted.

PLAN FOR THE CONTROL OF DESIGNATED POLLUTANTS FROM EXISTING FACILITIES (SECTION 111(d) PLAN)

FLUORIDE EMISSIONS FROM PHOSPHATE FERTILIZER PLANTS

§ 62.850 Identification of plan.

§ 62.350 Identification of plan—negative declaration.

The Alaska Department of Environmental Conservation submitted on June 9, 1977, certification that there are no existing phosphate fertilizer plants in the State subject to part 60, subpart B of this chapter.

(a) Identification of plan: Arkansas Plan for the Control of Designated Pollutants from Existing Plants (Section 111(d) Plan).

(b) The plan was officially submitted as follows:

ACID MIST FROM SULFURIC ACID PLANTS

§ 62.351 Identification of plan—negative declaration.

The Alaska Department of Environmental Conservation submitted on June 9, 1977, certification that there are no existing sulfuric acid plants in the State subject to part 60, subpart B of this chapter.

(1) Control of sulfuric acid mist from sulfuric acid plants, and fluoride emissions from phosphate fertilizer plants, submitted on July 11, 1979, having been adopted by the State on May 25, 1979, and letter dated August 6, 1981.

(2) Control of total reduced sulfur (TRS) emissions from existing kraft pulp mills submitted by the Governor on February 28, 1983, and adopted by the State on January 28, 1983.

(c) Designated facilities: The plan applies to existing facilities in the following categories of sources:

TOTAL REDUCED SULFUR EMISSIONS FROM KRAFT PULP MILLS

§ 62.352 Identification of plan—negative declaration.

The Alaska Department of Environmental Conservation submitted on June 9, 1977, certification that there are no existing kraft pulp mills in the State subject to part 60, subpart B of this chapter.

(1) Sulfuric acid plants.

(2) Phosphate fertilizer plants.

(3) Kraft pulp mills.

[47 FR 20491, May 12, 1982, as amended at 49 FR 35773, Sept. 12, 1984]

§ 62.852 Emission inventories, source surveillance, reports.

(a) For purposes of this subpart, the terms “the applicable plan” and “the plan” in 40 CFR 52.178(b), which provides for public availability of emission data, include this plan.

FLUORIDE EMISSIONS FROM PRIMARY ALUMINUM REDUCTION PLANTS

§ 62.353 Identification of plan—negative declaration.

The Alaska Department of Environmental Conservation submitted on June 9, 1977, certification that there are no existing primary aluminum reduction plants in the State subject to part 60, subpart B of this chapter.

FLUORIDE EMISSIONS FROM EXISTING PHOSPHATE FERTILIZER PLANTS

§ 62.854 Identification of sources.

The plan applies to existing facilities at the following existing phosphate fertilizer plant:

(1) Allied Chemical Company at Helena, Arkansas.

SULFURIC ACID MIST EMISSIONS FROM  
EXISTING SULFURIC ACID PLANTS

**§ 62.855 Identification of sources.**

(a) The plan applies to existing facilities at the following existing sulfuric acid plants:

- (1) Olin Corporation in North Little Rock, Arkansas.
- (2) The Monsanto Company in Eldorado, Arkansas.

TOTAL REDUCED SULFUR EMISSIONS  
FROM EXISTING KRAFT PULP MILLS

**§ 62.865 Identification of sources.**

(a) The plan applies to existing facilities at the following kraft pulp mill plants:

- (1) International Paper Company in Camden, Arkansas.
- (2) International Paper Company in Pine Bluff, Arkansas.
- (3) Arkansas Kraft Corporation in Morrilton, Arkansas.
- (4) Weyerhaeuser Company in Pine Bluff, Arkansas.
- (5) Georgia-Pacific Corporation in Crossett, Arkansas.
- (6) Wekoosa Paper Company in Ashdown, Arkansas.
- (7) Potlatch Corporation of McGehee, Arkansas.

[49 FR 35773, Sept. 12, 1984]

**§ 62.866 Compliance schedule.**

The Compliance Schedules were submitted on December 16, 1985, by the Governor to control total reduced Sulfur emissions from the seven kraft pulp mills identified in § 62.865(a). The schedules specify final compliance dates and enforceable increments to be as expeditiously as practicable but not more than six years from approval of the state regulations; i.e., October 12, 1990.

[51 FR 40803, Nov. 10, 1986]

**Subpart F—Plan for the Control of Designated Pollutants From Existing Facilities (Section 111(d) Plan)**

AUTHORITY: Sec. 111 of the Clean Air Act, as amended (42 U.S.C. 7411).

SOURCE: 47 FR 28100, June 29, 1982, unless otherwise noted.

**§ 62.1100 Identification of plan.**

(a) State of California Designated Facility Plan (Section 111(d) Plan).

(b) The plan was officially submitted as follows:

(1) Control of fluoride emissions from existing facilities at phosphate fertilizer plants, submitted on February 26 and July 16, 1979 and April 7, 1980 having been adopted by the Districts on December 1 and 6, 1979 and January 9, 1979. A letter clarifying the plan was submitted on March 27, 1979. Revisions to the plan were submitted on September 23, 1980 and February 5 and July 6, 1981.

(2) Control of sulfuric acid mist from existing facilities at sulfuric acid production units, submitted on February 26, July 16, and September 7, 1979 and April 7, 1980, having been adopted by the Districts on December 1 and 6, 1978 and January 9, 1979. Revisions to the plan were submitted on October 31, 1980, February 18, and May 1, 1981.

(3) Control of total reduced sulfur (TRS) emissions from existing kraft pulping mills submitted as follows:

(i) 9-25-79; submittal of existing rules; (a) Bay Area Air Quality Management District (AQMD) Rule 1, Regulation 12—Kraft Pulp Mills.

(b) Humboldt County Air Pollution Control District Regulation 1; Rule 130—Definitions, Rule 240—Permit to Operate, Rule 450—Sulfide Emissions from Kraft Pulp Mills.

(c) Shasta County Air Pollution Control District Rule 3:2—Specific Air Contaminants.

(ii) 3-21-80; Clarification of Bay Area Rule 1, Regulation 12—Kraft Pulp Mills.

(iii) 4-7-80; Summary of district rules and State laws that meet the requirements of 40 CFR, parts 60.23-60.26 for Designated Facilities in general.

(iv) 5-29-80; revision of Bay Area AQMD Rule 1, Regulation 12—Kraft Pulp Mills.

(v) 9-5-80; Evidence of public hearing and annual report schedule defined for Bay Area Rule 1, Regulation 12—Kraft Pulp Mills.

(vi) 11-4-81; (a) Humboldt County APCD Rules 130—Definitions; 240—Permit to Operate; and 450—Kraft Pulp Mills amended (7-28-81).

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(b) Shasta County APCD Rule 3:2—Specific Contaminants amended (8-4-81).

(c) A summary of compliance of all districts with the requirements set forth in 40 CFR 60.23 through 60.26.

(d) A list of witnesses appearing at Humboldt and Shasta Counties public hearings and a summary of testimonies Statewide emissions inventory of all TRS sources in the State.

(c) Designated facilities: The plans apply to existing facilities in the following categories of sources:

- (1) Existing phosphate fertilizer plants.
- (2) Existing sulfuric acid production units.
- (3) Existing kraft pulp mills.

[47 FR 28100, June 29, 1982, as amended at 47 FR 47384, Oct. 26, 1982]

FLUORIDE EMISSIONS FROM EXISTING PHOSPHATE FERTILIZER PLANTS

§ 62.1101 Identification of sources.

The plan applies to existing facilities at the following phosphate fertilizer plants:

- (a) Occidental Chemical Company in San Joaquin County.
- (b) Simplot Company in Kings County.
- (c) Valley Nitrogen Products, Inc., in Fresno County.

SULFURIC ACID MIST EMISSIONS FROM EXISTING SULFURIC ACID PRODUCTION UNITS

§ 62.1102 Identification of sources.

The plan applies to existing facilities at the following sulfuric acid production units:

- (a) Allied Chemical Corporation in Alameda County.
- (b) Monsanto Company in Alameda County.
- (c) Occidental Chemical Company in Fresno County.
- (d) Stauffer Chemical Company in Alameda County.
- (e) Valley Nitrogen Products, Inc. in Kern County.

FLUORIDE EMISSIONS FROM PRIMARY ALUMINUM REDUCTION PLANTS

§ 62.1103 Identification of plan—negative declaration.

TOTAL REDUCED SULPHUR EMISSIONS FROM EXISTING KRAFT PULP MILLS

§ 62.1104 Identification of sources.

The plan applies to existing facilities at the following kraft pulp mills:

- (a) Louisiana Pacific, Antioch, Contra Costa County Pulp Mill.
- (b) Louisiana Pacific Corp., Samoa Complex.
- (c) Crown Simpson Pulp Company, Fairhaven.
- (d) Simpson Paper Company, Shasta County Pulp Mill.

[47 FR 47385, Oct. 26, 1982]

Subpart G—[Reserved]

Subpart H—Connecticut

FLUORIDE EMISSIONS FROM PHOSPHATE FERTILIZER PLANTS

§ 62.1600 Identification of plan—negative declaration.

The State Department of Environmental Protection submitted on November 30, 1977, a letter certifying that there are no existing phosphate fertilizer plants in the state subject to part 60, subpart B of this chapter.

[44 FR 54052, Sept. 18, 1979]

SULFURIC ACID MIST EMISSIONS FROM SULFURIC ACID PRODUCTION UNITS

§ 62.1625 Identification of plan—negative declaration.

The State Department of Environmental Protection submitted on November 30, 1977, a letter certifying that there are no existing sulfuric acid plants in the state subject to part 60, subpart B of this chapter.

[44 FR 54052, Sept. 18, 1979]

§ 62.1650

TOTAL REDUCED SULFUR EMISSIONS  
FROM EXISTING KRAFT PULP MILLS

**§ 62.1650 Identification of plan—negative declaration.**

The State Department of Environmental Protection submitted on December 28, 1988, a letter certifying that there are no existing kraft pulp mills in the State subject to part 60, subpart B of this chapter.

[54 FR 9046 Mar. 3, 1989]

FLUORIDE EMISSIONS FROM EXISTING  
PRIMARY ALUMINUM PLANTS

**§ 62.1700 Identification of plan—negative declaration.**

The State Department of Environmental Protection submitted on December 28, 1988, a letter certifying that there are no existing primary aluminum reduction plants in the State subject to part 60, subpart B of this chapter.

[54 FR 9046 Mar. 3, 1989]

**Subpart I—Delaware**

FLUORIDE EMISSIONS FROM PHOSPHATE  
FERTILIZER PLANTS

**§ 62.1850 Identification of plan—negative declaration.**

The Delaware Department of Natural Resources and Environmental Control submitted on November 7, 1977, a letter certifying that there are no existing phosphate fertilizer plants in the State subject to part 60, subpart B of this chapter.

[45 FR 43412, June 27, 1980]

SULFURIC ACID MIST FROM EXISTING  
SULFURIC ACID PLANTS

**§ 62.1875 Identification of plan.**

(a) Title of plan: State implementation plan for control of sulfuric acid mist from existing sulfuric acid plants.

(b) The plan was officially submitted on September 8, 1978 with amendments submitted on December 29, 1980.

(c) Identification of Sources: The plan includes the following sulfuric acid plants:

(1) Allied Chemical Company, Claymont (New Castle County).

[47 FR 10536, Mar. 11, 1982]

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TOTAL REDUCED SULFUR EMISSIONS  
FROM EXISTING KRAFT PULP MILLS

**§ 62.1900 Identification of plan—negative declaration.**

The Delaware Department of Natural Resources and Environmental Control submitted on September 8, 1982, a letter certifying that there are no kraft pulp mills in the State subject to part 60, subpart B of this chapter.

[48 FR 10652, Mar. 14, 1983]

FLUORIDE EMISSIONS FROM PRIMARY  
ALUMINUM REDUCTION PLANTS

**§ 62.1925 Identification of plan—negative declaration.**

The Delaware Department of Natural Resources and Environmental Control submitted on September 8, 1982, a letter certifying that there are no primary aluminum reduction plants in the State subject to part 60, subpart B of this chapter.

[48 FR 10652, Mar. 14, 1983]

**Subpart J—District of Columbia**

FLUORIDE EMISSIONS FROM PHOSPHATE  
FERTILIZER PLANTS

**§ 62.2100 Identification of plan—negative declaration.**

The Department of Environmental Services submitted on December 12, 1977 a letter certifying that there are no existing phosphate fertilizer plants in the District subject to part 60, subpart B of this chapter.

[45 FR 43412, June 27, 1980]

SULFURIC ACID MIST EMISSIONS FROM  
EXISTING SULFURIC ACID PLANTS

**§ 62.2101 Identification of plan—negative declaration.**

The Director, Department of Environmental Services submitted on March 7, 1978 a letter certifying there are no existing sulfuric acid production units in the District subject to part 60, subpart B of this chapter.

[46 FR 41783, Aug. 18, 1981]

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### TOTAL REDUCED SULFUR EMISSIONS FROM EXISTING KRAFT PULP MILLS

#### § 62.2110 Identification of plan—negative declaration.

The Mayor of the District of Columbia submitted on July 16, 1980 a letter certifying there are no existing primary kraft pulp mills in the District subject to part 60, subpart B of this chapter.

[46 FR 41783, Aug. 18, 1981]

### FLUORIDE EMISSIONS FROM EXISTING PRIMARY ALUMINUM PLANTS

#### § 62.2120 Identification of plan—negative declaration.

The Mayor of the District of Columbia submitted on May 29, 1980 a letter certifying there are no existing primary aluminum plants in the District subject to part 60, subpart B of this chapter.

[46 FR 41783, Aug. 18, 1981]

## Subpart K—Florida

AUTHORITY: Secs. 110(a) and 111(d), Clean Air Act (42 U.S.C. 7410(a) and 7411(d)).

SOURCE: 48 FR 31402, July 8, 1983, unless otherwise noted.

### PLAN FOR THE CONTROL OF DESIGNATED POLLUTANTS FROM EXISTING FACILITIES (SECTION 111(d) PLAN)

#### § 62.2350 Identification of plan.

(a) *Identification of plan.* Florida Designated Facility Plan (Section 111(d) Plan).

(b) *The plan was officially submitted as follows.* (1) Control of sulfuric acid mist emissions from existing sulfuric acid production units, submitted on December 14, 1978.

(2) Control of total reduced sulfur (TRS) emissions from existing kraft pulp mills and tall oil plants (both new and existing) submitted on May 24, 1985, and revision submitted on June 10, 1986, by the Florida Department of Environmental Regulation (FDER). No action is taken on sections 17-2.600(4)(c)7 and 8.

(3) The final compliance date to achieve the TRS emission limits for the black liquor evaporation system, the batch digester system and the con-

tinuous digester system for St. Joe Paper Company in Port St. Joe is September 14, 1989.

(4) The final compliance date to achieve TRS emission limits for the No. 5 Multiple Effect Evaporation System, batch digester system and Kamyrdigester system for Container Corporation of America in Fernandina Beach, Florida is June 1, 1990.

(c) *Designated facilities.* The plan applies to existing facilities in the following categories of sources:

- (1) Sulfuric acid plants.
- (2) Kraft pulp mills.

[48 FR 31402, July 8, 1983, as amended at 53 FR 30053, Aug. 10, 1988; 54 FR 40003, Sept. 29, 1989; 54 FR 48102, Nov. 21, 1989]

### SULFURIC ACID MIST FROM EXISTING SULFURIC ACID PLANTS

#### § 62.2351 Identification of sources.

The plan applies to existing facilities at the following sulfuric acid plants:

- (a) Acid plants operated by:
  - (1) Occidental Petroleum Company in Hamilton County,
  - (2) AMAX Phosphate Inc. in Manatee County,
  - (3) Conserv Chemical in Nichols,
  - (4) Farmland Industry in Bartow County,
  - (5) W. R. Grace Company in Polk County,
  - (6) Royster Fertilizer in Polk County,
  - (7) USS Agrichemicals in Polk County,
  - (8) Central Farmers Co-Op in Polk County,
  - (9) Agrico Chemical Company in Polk County,
  - (10) Gardinier, Inc. in Hillsborough County, and
  - (11) ESTECH in Polk County.
- (b) There are no oleum plants.
- (c) There are no sulfur-burning plants.
- (d) There are no bound sulfur feedstock plants.

### FLUORIDE EMISSIONS FROM PRIMARY ALUMINUM REDUCTION PLANTS

#### § 62.2352 Identification of source—Negative declaration.

The Florida Department of Environmental Regulation submitted on April 22, 1985, a letter certifying that there

§ 62.2353

are no existing primary aluminum reduction plants in the State subject to part 60, subpart B of this chapter.

[50 FR 26204, June 25, 1985]

TOTAL REDUCED SULFUR EMISSIONS FROM KRAFT PULP MILLS AND TALL OIL PLANTS

§ 62.2353 Identification of sources.

The plan applies to existing facilities at the following existing kraft pulp plants and tall oil plants:

- (a) Alton Packaging Corporation in Jacksonville
- (b) Buckeye Cellulose Corporation in Perry
- (c) Champion International Corporation (Formerly St. Regis Paper Company) in Cantonment
- (d) Container Corporation of America in Fernandina Beach
- (e) Georgia-Pacific Corporation in Palatka
- (f) Jacksonville Kraft Paper Company in Jacksonville
- (g) St. Joe Paper Company in Port St. Joe
- (h) Southwest Forest Industries in Panama City
- (i) Arizona Chemical Company (Tall Oil Plant) in Panama City
- (j) Sylvachem Corporation (Tall Oil Plant) in Port St. Joe

[53 FR 30053, Aug. 10, 1988]

§ 62.2354 Compliance schedules.

The State of Florida has provided that the individual source compliance schedules would be developed and submitted by the affected sources to the State following plan adoption; and that the increments of progress pursuant to 40 CFR 60.21(h) would be specified at that time; this is an acceptable procedure pursuant to 40 CFR 60.24(e)(2). However, the State must submit these schedules to EPA for approval; and these schedules must meet the public hearing requirements of 40 CFR 60.23 or ones deemed equivalent by the Administrator pursuant to 40 CFR 60.23(g).

[53 FR 30053, Aug. 10, 1988]

Subpart L—Georgia

AUTHORITY: Secs. 110(a) and 111(d), Clean Air Act (42 U.S.C. 7410(a) and 7411(d)).

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SOURCE: 48 FR 31402, July 8, 1983, unless otherwise noted.

PLAN FOR THE CONTROL OF DESIGNATED POLLUTANTS FROM EXISTING FACILITIES (SECTION 111(d) PLAN)

§ 62.2600 Identification of plan.

(a) Identification of plan. Georgia Designated Facility Plan (Section 111(d) Plan).

(b) The plan was officially submitted as follows. (1) Control of sulfuric acid emissions from existing sulfuric acid production units, submitted on January 31, 1978;

(2) Control of total reduced sulfur emissions from existing facilities at kraft pulp mills, submitted on January 8, 1982.

(3) A compliance schedule for sources subject to the plan for the control of total reduced sulfur emissions from existing kraft pulp mills and a starting date for such rule, submitted on June 3, 1988.

(c) Designated facilities. The plan applies to existing facilities in the following categories of sources:

- (1) Sulfuric acid plants;
- (2) Kraft pulp mills.

SULFURIC ACID MIST FROM EXISTING SULFURIC ACID PLANTS

[48 FR 31402, July 8, 1983, as amended at 53 FR 38291, Sept. 30, 1988]

§ 62.2601 Identification of sources.

The plan applies to existing facilities at the following sulfuric acid plants:

(a) Sulfur-burning plants operated by:

- (1) American Cyanamid Company in Savannah, and
- (2) Cities Service Company in Augusta.

(b) Oleum plant of Cities Service Company in Augusta.

(c) There are no bound sulfur feedstock plants.

FLUORIDE EMISSIONS FROM PHOSPHATE FERTILIZER PLANTS

§ 62.2602 Identification of sources—Negative declaration.

The Georgia Environmental Protection Division submitted on July 14, 1977, a letter certifying that there are

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no existing phosphate fertilizer plants in the State subject to part 60, subpart B, of this chapter.

TOTAL REDUCED SULFUR EMISSIONS FROM KRAFT PULP MILLS

§ 62.2603 Identification of sources.

The plan applies to existing facilities at the following kraft pulp mills:

- (a) Continental Can in Augusta,
- (b) Continental Can in Port Wentworth,
- (c) Brunswick in Brunswick,
- (d) Georgia Kraft in Rome,
- (e) Georgia Kraft in Macon,
- (f) Gilman in St. Marys,
- (g) Great Southern in Cedar Springs,
- (h) Interstate in Riceboro,
- (i) ITT Rayonier in Jesup,
- (j) Owens-Illinois in Valdosta, and
- (k) Union Camp in Savannah.

§ 62.2604 [Reserved]

FLUORIDE EMISSIONS FROM EXISTING PRIMARY ALUMINUM REDUCTION PLANTS

§ 62.2605 Identification of sources—Negative declaration.

The Georgia Environmental Protection Division submitted a letter on October 19, 1983, certifying that there are no existing primary aluminum reduction plants in the State of Georgia subject to 40 CFR part 60, subpart B, of this chapter.

[49 FR 3855, Jan. 31, 1984]

Subpart M—[Reserved]

Subpart N—Idaho

FLUORIDE EMISSIONS FROM EXISTING PRIMARY ALUMINUM PLANTS

§ 62.3100 Identification of plan—negative declaration.

The State of Idaho Department of Health and Welfare submitted on February 23, 1981, certification that there are no existing primary aluminum plants in the State subject to part 60, subpart B of this chapter.

[47 FR 47250, Oct. 25, 1982]

Subpart O—Illinois

SULFURIC ACID MIST EMISSIONS FROM EXISTING SULFURIC ACID PRODUCTION PLANTS

§ 62.3300 Identification of plan.

(a) Title of Plan: "Illinois Plan for the Control of Sulfuric Acid Mist from Existing Contract Process Sulfuric Acid Plants."

(b) The plan was officially submitted on August 10, 1978.

(c) Identification of sources: The plan includes the following sulfuric acid production plants:

- (1) Beker Industries in LaSalle County.
- (2) U.S.I. Chemical Company in Douglas County.
- (3) Mobil Chemical Company in Bureau County.
- (4) Swift Chemical Company in Cook County.
- (5) American Cyanamid Company in Will County.
- (6) Amax Zinc Company in St. Clair County.
- (7) Monsanto Company in St. Clair County.
- (8) Smith Douglas—Division of Border Chemical in Livingston County.

[46 FR 57896, Nov. 27, 1981]

TOTAL REDUCED SULFUR EMISSIONS FROM KRAFT PULP MILLS

§ 62.3325 Identification of Plan—negative declaration.

The Illinois Environmental Protection Agency submitted on July 23, 1979, a letter certifying that there are no existing kraft pulp mills in the State subject to part 60, subpart B of this chapter.

[46 FR 57896 Nov. 27, 1981]

Subpart P—Indiana

FLUORIDE EMISSIONS FROM PHOSPHATE FERTILIZER PLANTS

§ 62.3600 Identification of plan—negative declaration.

The State Board of Health submitted on April 18, 1977, a letter certifying that there are no existing phosphate fertilizer plants in the State subject to part 60, subpart B of this chapter.

§ 62.3625

FLUORIDE EMISSIONS FROM EXISTING  
PRIMARY ALUMINUM PLANTS

§ 62.3625 Identification of plan.

(a) *Title of plan.* "Fluoride Emission Limitations for Existing Primary Aluminum Plants."

(b) The plan was officially submitted on January 7, 1981 by the Technical Secretary of the Indiana Air Pollution Control Board.

(c) The State on July 17, 1981, submitted Alcoa methods 4075A, 4076A, 913A, 914E and 914F as alternate test methods.

[46 FR 57896, Nov. 27, 1981, as amended at 46 FR 57897, Nov. 27, 1981]

Subpart Q—Iowa

SOURCE: 50 FR 52921, Dec. 27, 1985, unless otherwise noted.

PLAN FOR THE CONTROL OF DESIGNATED  
POLLUTANTS FROM EXISTING FACILITIES  
(SECTION 111(d) PLAN)

§ 62.3850 Identification of plan.

(a) *Identification of plan.* Iowa Plan for Control of Designated Pollutants from Existing Facilities (Section 111(d) Plan).

(b) The plan was officially submitted as follows:

(1) Control of sulfuric acid mist from existing facilities at sulfuric acid production plants, effective on June 16, 1971, having been submitted by the State on February 23, 1978. Additional information was provided in letters of February 7, 1983; May 13, 1985; and June 12, 1985.

(2) Control of fluoride emissions from existing facilities at phosphate fertilizer plants, effective on August 29, 1979, having been submitted by the State on October 19, 1979. Additional information was provided in letters of February 7, 1983; May 13, 1985; and June 12, 1985.

(3) Control of sulfur dioxide and sulfuric acid mist from sulfuric acid manufacturing plants in Polk County were adopted on October 26, 1993, and submitted on March 23, 1994.

(c) *Designated facilities.* The plan applies to existing facilities in the following categories of sources:

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- (1) Sulfuric acid production plants.
- (2) Phosphate fertilizer plants.

[50 FR 52921, Dec. 27, 1985, as amended at 60 FR 31092, June 13, 1995]

SULFURIC ACID MIST FROM EXISTING  
SULFURIC ACID PRODUCTION PLANTS

§ 62.3851 Identification of sources.

(a) The plan applies to existing facilities at the following sulfuric acid production plants:

- (1) Agrico Chemical Company, Fort Madison, Iowa
- (2) Koch Sulfur Products Company, Dubuque, Iowa

FLUORIDE EMISSIONS FROM EXISTING  
PHOSPHATE FERTILIZER PLANTS

§ 62.3852 Identification of sources.

(a) The plan applies to existing facilities at the following phosphate fertilizer plants:

- (1) Agrico Chemical Company, Fort Madison, Iowa.
- (2) Chevron Chemical Company, Fort Madison, Iowa.
- (3) Occidental Chemical Company, Buffalo, Iowa.

TOTAL REDUCED SULFUR EMISSIONS  
FROM EXISTING KRAFT PULP MILLS

§ 62.3853 Identification of plan—negative declaration.

Letter from Executive Director of Iowa Department of Environmental Quality submitted on February 7, 1983, certifying that there are no kraft pulp mills in the State of Iowa subject to part 60, subpart B of this chapter.

FLUORIDE EMISSIONS FROM EXISTING  
PRIMARY ALUMINUM REDUCTION PLANTS

§ 62.3854 Identification of plan—negative declaration.

Letter from the Iowa Department of Water, Air and Waste Management submitted on May 13, 1985, certifying that there are no primary aluminum reduction plants in the State of Iowa subject to part 60, subpart B of this chapter.

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TOTAL REDUCED SULFUR EMISSIONS FROM EXISTING KRAFT PULP MILLS

§62.3910 Identification of plan—negative declaration.

Letter from Executive Director of Iowa Department of Environmental Quality submitted on February 7, 1983, certifying that there are no kraft pulp mills in the State of Iowa, subject to part 60, subpart B of this chapter.

[49 FR 43058, Oct. 26, 1984]

EMISSIONS FROM EXISTING MUNICIPAL WASTE COMBUSTORS WITH THE CAPACITY TO BURN GREATER THAN 250 TONS PER DAY OF MUNICIPAL SOLID WASTE

§62.3911 Identification of plan—negative declaration.

Letter from the Administrator of the Environmental Protection Division of the Department of Natural Resources submitted June 4, 1991, certifying that there are no existing municipal waste combustors in the state of Iowa subject to this 111(d) requirement.

[56 FR 56321, Nov. 4, 1991]

Subpart R—Kansas

SOURCE: 49 FR 7234, Feb. 28, 1984, unless otherwise noted.

FLUORIDE EMISSIONS FROM EXISTING PHOSPHATE FERTILIZER PLANTS

§62.4100 Identification of plan—negative declaration.

Letter from the Director of the Department of Health and Environment submitted on August 2, 1978, certifying that there are no phosphate fertilizer manufacturing facilities in the State of Kansas.

TOTAL REDUCED SULFUR EMISSIONS FROM EXISTING KRAFT PULP MILLS

§62.4125 Identification of plan—negative declaration.

Letter from the Director of the Department of Health and Environment submitted on July 17, 1979, certifying that there are no kraft pulp mills in the State of Kansas.

FLUORIDE EMISSIONS FROM EXISTING PRIMARY ALUMINUM REDUCTION PLANTS

§62.4150 Identification of plan—negative declaration.

Letter from the Director, Division of Environment, Kansas Department of Health and Environments submitted on May 23, 1984, certifying that there are no primary aluminum reduction plants on the State of Kansas, subject to part 60, subpart B of this chapter.

[49 FR 43058, Oct. 26, 1984]

SULFURIC ACID MIST FROM EXISTING SULFURIC ACID PRODUCTION PLANTS

§62.4175 Identification of plan.

(a) Identification of plan. State of Kansas Implementation Plan for Control of Sulfuric Acid Mist from Existing Sulfuric Acid Plants.

(b) The Plan was officially submitted on February 6, 1986.

(c) Identification of sources. The Plan applies to existing facilities at the following existing sulfuric acid plant:

(1) Koch Sulfur Products, DeSoto, Kansas.

[51 FR 37275, Oct. 21, 1986]

EMISSIONS FROM EXISTING MUNICIPAL WASTE COMBUSTORS WITH THE CAPACITY TO BURN GREATER THAN 250 TONS PER DAY OF MUNICIPAL SOLID WASTE

§62.4176 Identification of plan—negative declaration.

Letter from the Director of the Bureau of Air and Waste Management of the Department of Health and Environment submitted July 3, 1991, certifying that there are no existing municipal waste combustors in the state of Kansas subject to this 111(d) requirement.

[56 FR 56321, Nov. 4, 1991]

Subpart S—Kentucky

SOURCE: 47 FR 22956, May 26, 1982, unless otherwise noted.

§ 62.4350

PLAN FOR THE CONTROL OF DESIGNATED POLLUTANTS FROM EXISTING FACILITIES (SECTION 111(d) PLAN)

§ 62.4350 Identification of plan.

(a) Identification of plan. Kentucky Designated Facility Plan (Section 111(d) Plan).

(b) The plan was officially submitted as follows:

(1) Control of sulfuric acid mist emissions from existing facilities at sulfuric acid plants, total reduced sulfur emissions from existing facilities at kraft pulp mills, fluoride emissions from existing facilities at primary aluminum reduction plants, officially submitted on December 15, 1981.

(c) Designated facilities. The plan applies to existing facilities in the following categories of sources:

- (1) Sulfuric acid plants.
(2) Kraft pulp mills.
(3) Primary aluminum reduction plants.

SULFURIC ACID MIST FROM EXISTING SULFURIC ACID PLANTS

§ 62.4351 Identification of sources.

The plan applies to existing facilities at the following sulfuric acid plant: E.I. du Pont sulfuric acid plant in Wurtland, Ky.

TOTAL REDUCED SULFUR FROM EXISTING KRAFT PULP MILLS

§ 62.4352 Identification of sources.

The plan applies to existing facilities at the following kraft pulp mills:

- (a) Westvaco Corp., Fine Papers Division, Wickliffe, Ky.
(b) Willamette Industries, Corrugated Medium Mill and Bleached Pulp Mill, Hawesville, Kentucky.

FLUORIDE EMISSIONS FROM EXISTING PRIMARY ALUMINUM REDUCTION PLANTS

§ 62.4353 Identification of sources.

The plan applies to existing facilities at the following primary aluminum reduction plants:

- (a) National Southwire Aluminum, Hawesville, Ky.
(b) Anaconda Company, Aluminum Division, Henderson, Ky.

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FLUORIDE EMISSIONS FROM PHOSPHATE FERTILIZER PLANTS

§ 62.4354 Identification of plan—negative declaration.

The Kentucky Department for Natural Resources and Environmental Protection certified in a letter dated August 25, 1978, that Kentucky has no designated facilities in this source category.

Subpart T—Louisiana

SOURCE: 44 FR 54053, Sept. 18, 1979, unless otherwise noted.

PLAN FOR CONTROL OF DESIGNATED POLLUTANTS FROM EXISTING FACILITIES (SECTION 111(d) PLAN)

§ 62.4620 Identification of plan.

(a) Identification of plan. Louisiana Plan for Control of Designated Pollutants from Existing Facilities (111(d) Plan).

(b) The plan was officially submitted as follows:

(1) Control of sulfuric acid mist from sulfuric acid plants, and fluoride emissions from existing facilities at phosphate fertilizer plants, submitted on July 18, 1978, having been adopted by the State November 30, 1977, and letter dated February 16, 1982.

(2) Control of fluoride emissions from existing facilities at primary aluminum plants, submitted on January 12, 1981, having been adopted by the State on December 11, 1980.

(3) Control of total reduced sulfur from existing facilities at kraft pulp mill plants, submitted in December 1979, having been adopted November 27, 1979, and letter dated February 16, 1982.

(c) Designated facilities. The plan applies to existing facilities in the following categories of sources:

- (1) Sulfuric acid plants.
(2) Phosphate fertilizer plants.
(3) Primary aluminum plants.
(4) Kraft pulp mills.

[47 FR 20491—20493, May 12, 1982]

§ 62.4621 Emission standards and compliance schedules.

(a) The requirements of § 60.24(b)(2) of this chapter are not met since the test

methods and procedures for determining compliance with the sulfuric acid mist emission standards are not specified.

(b) Emissions from sulfuric acid plants must be measured by the methods in appendix A to part 60, or by equivalent or alternative methods as defined in §60.2 (t) and (u) respectively.

**§62.4622 Emission inventories, source surveillance, reports.**

(a) The requirements of §60.25(a) of this chapter are not met since the emission inventories do not provide information as specified in appendix D to part 60.

(b) The requirements of §60.25(c) of this chapter are not met since the plan does not provide for the disclosure of emission data, as correlated with applicable emission standards, to the general public.

(c) *Regulation for public availability of emission data.* (1) Any person who cannot obtain emission data from the agency responsible for making emission data available to the public, as specified in the applicable plan, concerning emissions from any source subject to emission limitations which are part of the approved plan may request that the appropriate Regional Administrator obtain and make public such data. Within 30 days after receipt of any such written request, the Regional Administrator shall require the owner or operator of any such source to submit information within 30 days on the nature and amounts of emissions from such source and any other information as may be deemed necessary by the Regional Administrator to determine whether such source is in compliance with applicable emission limitations or other control measures that are part of the applicable plan.

(2) Commencing after the initial notification by the Regional Administrator pursuant to paragraph (c)(1) of this section, the owner or operator of the source shall maintain records of the nature and amounts of emissions from such source and any other information as may be deemed necessary by the Regional Administrator to determine whether such source is in compliance with applicable emission limitations or other control measures that

are part of the plan. The information recorded shall be summarized and reported to the Regional Administrator, on forms furnished by the Regional Administrator, and shall be submitted within 45 days after the end of the reporting period. Reporting periods are January 1–June 30 and July 1–December 31.

(3) Information recorded by the owner or operator and copies of this summarizing report submitted to the Regional Administrator shall be retained by the owner or operator for 2 years after the date on which the pertinent report is submitted.

(4) Emission data obtained from owners or operators of stationary sources will be correlated with applicable emission limitations and other control measures that are part of the applicable plan and will be available at the appropriate regional office and at other locations in the State designated by the Regional Administrator.

**§62.4623 Legal authority.**

(a) The requirements of §60.26(a) of this chapter are not met since the plan does not provide adequate legal authority for the State to make emission data, as correlated with applicable emissions standards, available to the general public.

SULFURIC ACID MIST FROM EXISTING  
SULFURIC ACID PLANTS

**§62.4624 Identification of sources.**

Identification of sources: The plan includes the following sulfuric acid plants:

- (1) Agrico Chemical Company in St. James Parish.
- (2) Allied Chemical Corporation in Ascension and Iberville Parishes.
- (3) Beker Industries in St. Charles Parish.
- (4) Cities Services Oil Company in Calcasieu Parish.
- (5) E. I. du Pont de Nemours & Company, Inc. in Ascension Parish.
- (6) Freeport Chemical Company in St. James Parish.
- (7) Freeport Chemical Company in Plaquemines Parish.
- (8) Olin Corporation in Caddo Parish.

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(9) Stauffer Chemical Company in East Baton Rouge Parish.

[44 FR 54053, Sept. 18, 1979. Redesignated at 47 FR 20491, May 12, 1982]

FLUORIDE EMISSIONS FROM EXISTING PHOSPHATE FERTILIZER PLANTS

§ 62.4625 Identification of sources.

(a) The Plan applies to existing facilities at the following phosphate fertilizer plants:

- (1) Agrico Chemical Company at Donaldsville, Louisiana.
- (2) Allied Chemical Corporation at Geismar, Louisiana.
- (3) Beker Industries at Taft, Louisiana.
- (4) Freeport Chemical at Uncle Sam, Louisiana.
- (5) Monsanto at Luling, Louisiana.

[47 FR 20491, May 12, 1982]

§ 62.4626 Effective date.

(a) The effective date of the portion of the plan applicable to phosphate fertilizer plants is July 12, 1982.

[47 FR 20491, May 12, 1982]

FLUORIDE EMISSIONS FROM EXISTING PRIMARY ALUMINUM PLANTS

§ 62.4627 Identification of sources.

The plan applies to existing facilities at the following primary aluminum plants:

- (1) The Kaiser Plant at Chalmette, Louisiana.
- (2) The CONALCO Plant at Lake Charles, Louisiana.

[47 FR 20492, May 12, 1982]

§ 62.4628 Effective date.

The effective date of this portion of the State's plan is July 12, 1982.

[47 FR 20492, May 12, 1982]

TOTAL REDUCED SULFUR EMISSIONS FROM EXISTING KRAFT PULP MILLS

§ 62.4629 Identification of sources.

The plan applies to existing facilities at the following kraft pulp mill plants:

- (1) Boise at DeRidder, La.
- (2) Boise at Elizabeth, La.
- (3) Continental at Hodge, La.
- (4) Crown-Zellerbach at Bogalusa, La.

(5) Crown-Zellerbach at St. Francisville, La.

(6) Georgia-Pacific at Port Hudson, La.

(7) International Paper at Bastrop, La.

(8) Olinkraft at West Monroe, La.

(9) Pineville Kraft at Pineville, La.

(10) Western Kraft at Compte, La.

[47 FR 20493, May 12, 1982]

§ 62.4630 Effective date.

The effective date of the portion of the plan applicable to kraft pulp mills is July 12, 1982.

[47 FR 20493, May 12, 1982]

Subpart U—Maine

PLAN FOR THE CONTROL OF DESIGNATED POLLUTANTS FROM EXISTING FACILITIES (SECTION 111(d) PLAN)

§ 62.4845 Identification of plan.

(a) *Identification of plan.* Maine Plan for the Control of Designated Pollutants from Existing Plants (Section 111(d) Plan).

(b) The plan was officially submitted as follows:

(1) Control of sulfuric acid mist emissions from existing sulfuric acid production units, submitted on November 10, 1988.

(2) Control of total reduced sulfur (TRS) emissions from existing kraft pulp mills, submitted on February 15, 1990.

(3) A revision to the plan to control TRS from existing kraft pulp mills, which extends the final compliance date for brown stock washers to January 1, 1997, was submitted on April 27, 1994.

(c) *Designated facilities.* The plan applies to existing facilities in the following categories of sources:

- (1) Sulfuric acid plants.
- (2) Kraft pulp mills.

[54 FR 22896, May 30, 1989, as amended at 55 FR 38548, Sept. 19, 1990; 59 FR 50507, Oct. 4, 1994]

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FLUORIDE EMISSIONS FROM EXISTING  
PRIMARY ALUMINUM PLANTS

**§ 62.4875 Identification of sources—  
negative declaration.**

The State Department of Environmental Protection submitted on October 3, 1988, a letter certifying that there are no existing primary aluminum reduction plants in the State subject to part 60, subpart B of this chapter.

[54 FR 9046 Mar. 3, 1989]

SULFURIC ACID MIST FROM EXISTING  
SULFURIC ACID PLANTS

**§ 62.4900 Identification of sources.**

The plan applies to the following existing sulfuric acid plants:

(a) Delta Chemical in Searsport, Maine.

[54 FR 22896, May 30, 1989]

TOTAL REDUCED SULFUR FROM EXISTING  
KRAFT PULP MILLS

**§ 62.4925 Identification of sources.**

(a) The plan applies to the following existing kraft pulp mills:

(1) International Paper Company in Jay.

(2) S.D. Warren Company in Westbrook.

(3) Boise Cascade in Rumford.

(4) James River Corporation in Old Town.

(5) Georgia-Pacific Corporation in Woodland.

(6) Lincoln Pulp and Paper Company in Lincoln.

[55 FR 38548, Sept. 19, 1990]

FLUORIDE EMISSIONS FROM PHOSPHATE  
FERTILIZER PLANTS

**§ 62.4950 Identification of plan—  
negative declaration.**

The State Department of Environmental Protection submitted on April 19, 1978, a letter certifying that there are no existing phosphate fertilizer plants in the state subject to part 60, subpart B of this chapter.

[44 FR 54052, Sept 18, 1979. Redesignated at 54 FR 22896, May 30, 1989]

**Subpart V—Maryland**

AUTHORITY: Clean Air Act, sec. 111(d).

SOURCE: 49 FR 8613, Mar. 8, 1984, unless otherwise noted.

PLAN FOR CONTROL OF DESIGNATED POLLUTANTS FROM EXISTING FACILITIES  
(SECTION 111(d) PLAN)

**§ 62.5100 Identification of plan.**

(a) *Identification of plan.* Maryland Plan for Control Designated Pollutants from Existing Facilities (Section 111(d) plan).

(b) The plan was officially submitted as follows:

(1) Control of sulfuric acid mist from sulfuric acid plants, submitted by the Secretary of Health and Mental Hygiene, State of Maryland on August 30, 1978.

(2) Control of TRS emissions from kraft pulp mills, submitted by the Governor of Maryland on May 18, 1981, and approval of a compliance schedule, submitted by the State of Maryland on September 24, 1982.

(3) Control of fluoride emissions from primary aluminum reduction plants, submitted by the Secretary of Health and Mental Hygiene, State of Maryland on January 26, 1984.

(c) *Designated facilities.* The plan applies to existing facilities in the following categories of sources:

(1) Sulfuric acid plants;

(2) Kraft pulp mills.

(3) Primary aluminum reduction plants.

[49 FR 8613, Mar. 8, 1984, as amended at 50 FR 9628, Mar. 11, 1985]

SULFURIC ACID MIST FROM EXISTING  
SULFURIC ACID PLANTS

**§ 62.5101 Identification of sources.**

(a) The plan applies to the following existing sulfuric acid plants:

(1) Olin Corporation, Baltimore City, Maryland.

TOTAL REDUCED SULFUR EMISSIONS  
FROM EXISTING KRAFT PULP MILLS

**§ 62.5102 Identification of sources.**

(a) The plan applies to existing facilities at the following kraft pulp mills:

(1) Westvaco Fine Papers Divisions, Luke, Maryland.

§ 62.5103

FLUORIDE EMISSIONS FROM PRIMARY ALUMINUM REDUCTION PLANTS

**§ 62.5103 Identification of sources.**

(a) The plan applies to the following existing primary aluminum reduction plants:

(1) Eastalco Aluminum Plant, Frederick, Maryland.

[50 FR 9628, Mar. 11, 1985]

**Subpart W—Massachusetts**

FLUORIDE EMISSIONS FROM PHOSPHATE FERTILIZER PLANTS

**§ 62.5350 Identification of plan—negative declaration.**

The State Department of Environmental Quality Engineering submitted on April 12, 1978, a letter certifying that there are no existing phosphate fertilizer plants in the state subject to part 60, subpart B of this chapter.

[44 FR 54052, Sept 18, 1979]

SULFURIC ACID MIST EMISSIONS FROM EXISTING SULFURIC ACID PLANTS

**§ 62.5351 Identification of plan—negative declaration.**

On February 18, 1986, the Commonwealth of Massachusetts submitted a letter certifying that there are no existing sulfuric acid plants in the Commonwealth of Massachusetts.

[51 FR 40801, Nov. 10, 1986]

TOTAL REDUCED SULFUR EMISSIONS FROM EXISTING KRAFT PULP MILLS

**§ 62.5375 Identification of plan—negative declaration.**

The State Department of Environmental Quality Engineering submitted on July 31, 1979, a letter certifying that there are no existing kraft pulp mills in the State subject to part 60, subpart B of this chapter.

[54 FR 9047, Mar. 3, 1989]

FLUORIDE EMISSIONS FROM EXISTING PRIMARY ALUMINUM PLANTS

**§ 62.5400 Identification of plan—negative declaration.**

The State Department of Environmental Quality Engineering submitted on January 18, 1989, a letter certifying

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that there are no existing primary aluminum reduction plants in the State subject to part 60, subpart B of this chapter.

[54 FR 9047, Mar. 3, 1989]

**Subpart X—Michigan**

FLUORIDE EMISSIONS FROM PHOSPHATE FERTILIZER PLANTS

**§ 62.5600 Identification of plan—negative declaration.**

The State Department of Resources submitted on April 18, 1977, a letter certifying that there are no existing phosphate fertilizer plants in the State subject to part 60, subpart B of this chapter.

**Subpart Y—Minnesota**

FLUORIDE EMISSIONS FROM PHOSPHATE FERTILIZER PLANTS

**§ 62.5850 Identification of plan—negative declaration.**

The State Pollution Control Agency submitted on April 7, 1977, a letter certifying that there are no existing phosphate fertilizer plants in the State subject to part 60, subpart B of this chapter.

**Subpart Z—Mississippi**

PLAN FOR THE CONTROL OF DESIGNATED POLLUTANTS FROM EXISTING FACILITIES (SECTION 111(d) PLAN)

SOURCE: 47 FR 29235, July 6, 1982, unless otherwise noted.

**§ 62.6100 Identification of plan.**

(a) *Identification of plan.* Untitled (Section 111(d) Plan).

(b) The plan was officially submitted as follows:

(1) Control of sulfuric acid mist emissions from existing facilities at sulfuric acid plants, submitted on September 17, 1981.

(2) Control of total reduced sulfur emissions from existing kraft pulp mills, submitted on October 30, 1987.

(c) *Designated facilities.* The plan applies to existing facilities in the following categories of sources:

(1) Sulfuric acid plants.

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- (2) Phosphate fertilizer plants.
- (3) Kraft pulp mills.

[47 FR 29235, July 6, 1982, as amended at 54 FR 7771, Feb. 23, 1989]

SULFURIC ACID MIST FROM EXISTING SULFURIC ACID PLANTS

§ 62.6110 Identification of sources.

The plan applies to existing plants at the following locations: Sulfur burning plant and oleum plant of Mississippi Chemical Corporation in Pascagoula.

FLUORIDE EMISSIONS FROM PHOSPHATE FERTILIZER PLANTS

§ 62.6120 Identification of sources.

The plan applies to existing facilities at the following phosphate fertilizer plants.

- (1) Mississippi Chemical Corporation in Pascagoula.

FLUORIDE EMISSIONS FROM PRIMARY ALUMINUM REDUCTION PLANTS

§ 62.6121 Identification of sources—Negative declaration.

The Mississippi Bureau of Pollution Control submitted on March 6, 1985, a letter certifying that there are no existing primary aluminum reduction plants in the State subject to part 60, subpart B of this chapter.

[50 FR 26204, June 25, 1985]

TOTAL REDUCED SULFUR EMISSIONS FROM KRAFT PULP MILLS

§ 62.6122 Identification of sources.

The plan applies to existing facilities at the following kraft pulp mills:

- (a) Georgia-Pacific Corporation, Monticello.
- (b) International Paper Company, Moss Point.
- (c) International Paper Company, Natchez.
- (d) International Paper Company, Vicksburg.

[54 FR 7771, Feb. 23, 1989]

MUNICIPAL WASTE COMBUSTORS

§ 62.6123 Identification of sources—Negative declaration.

The Mississippi Bureau of Pollution Control submitted on August 6, 1991, a

letter certifying that there are no municipal waste combustors in the State subject to part 60, subpart B of this chapter.

[57 FR 43405, Sept. 21, 1992]

Subpart AA—Missouri

SOURCE: 51 FR 8828, Mar. 14, 1986, unless otherwise noted.

PLAN FOR THE CONTROL OF DESIGNATED POLLUTANTS FROM EXISTING FACILITIES (SECTION 111(d) PLAN)

§ 62.6350 Identification of plan.

- (a) *Identification of plan.* Missouri Plan for Control of Designated Pollutants from Existing Facilities (Section 111(d) Plan).

- (b) The plan was officially submitted as follows:

(1) Control of fluoride emissions from existing facilities at phosphate fertilizer plants, and fluoride emissions from existing facilities at primary aluminum reduction plants, submitted on September 22, 1981, having been adopted by the State on June 17 and June 21, 1981. A letter conveying additional information regarding this plan was submitted on January 3, 1985.

(2) Control of sulfuric acid mist from existing facilities at sulfuric acid production plants, submitted on March 12, 1979, having been adopted by the State in 1967 and 1971. A letter providing additional information regarding this plan was submitted on January 3, 1985.

- (c) *Designated facilities.* The plan applies to existing facilities in the following categories of sources:

- (1) Phosphate fertilizer plants.
- (2) Primary aluminum reduction plants.
- (3) Sulfuric acid production plants.

FLUORIDE EMISSIONS FROM EXISTING PHOSPHATE FERTILIZER PLANTS

§ 62.6351 Identification of sources.

The plan applies to existing facilities at the following phosphate fertilizer plant:

- Farmers Chemical Company, Joplin, Missouri

§ 62.6352

FLOURIDE EMISSIONS FROM EXISTING  
PRIMARY ALUMINUM REDUCTION PLANTS

§ 62.6352 Identification of sources.

The plan applies to existing facilities at the following primary aluminum reduction plant:

Noranda Aluminum, Inc., New Madrid, Missouri

SULFURIC ACID MIST FROM EXISTING  
SULFURIC ACID PRODUCTION PLANTS

§ 62.6353 Identification of sources.

The plan applies to existing facilities at the following sulfuric acid production plant:

W.R. Grace and Company, Joplin, Missouri

TOTAL REDUCED SULFUR EMISSIONS  
FROM EXISTING KRAFT PULP MILLS

§ 62.6354 Identification of plan—negative declaration.

Letter from the Director of the Missouri Department of Natural Resources submitted on May 14, 1982, certifying that there are no kraft pulp mills in the State subject to part 60, subpart B of this chapter.

EMISSIONS FROM EXISTING MUNICIPAL  
WASTE COMBUSTORS WITH THE CAPACITY TO BURN GREATER THAN 250  
TONS PER DAY OF MUNICIPAL SOLID  
WASTE

§ 62.6355 Identification of plan—negative declaration.

Letter from the Director of the Air Pollution Control Program of the Department of Natural Resources submitted May 23, 1991, certifying that there are no existing municipal waste combustors in the state of Missouri subject to this 111(d) requirement.

[56 FR 56321, Nov. 4, 1991]

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Subpart BB—[Reserved]

Subpart CC—Nebraska

SOURCE: 49 FR 7234, Feb. 28, 1984, unless otherwise noted.

FLUORIDE EMISSIONS FROM EXISTING  
PHOSPHATE FERTILIZER PLANTS

§ 62.6850 Identification of plan—negative declaration.

Letter from the Director of the Department of Environmental Control submitted on May 4, 1977, certifying that there are no phosphate fertilizer plants in the State of Nebraska.

SULFURIC ACID MIST EMISSIONS FROM  
EXISTING SULFURIC ACID PLANTS

§ 62.6875 Identification of plan—negative declaration.

Letter from the Chief of the Air Pollution Control Division of the Department of Environmental Control submitted on December 9, 1977, certifying that there are no existing sulfuric acid plants in the State of Nebraska.

TOTAL REDUCED SULFUR EMISSIONS  
FROM EXISTING KRAFT PULP MILLS

§ 62.6880 Identification of plan—negative declaration.

Letter from the Chief of the Air Pollution Control Division of the Department of Environmental Control submitted on March 16, 1984, certifying that there are no existing kraft pulp mills in the State of Nebraska, subject to part 60, subpart B of this chapter.

[49 FR 43058, Oct. 26, 1984]

FLUORIDE EMISSIONS FROM EXISTING  
PRIMARY ALUMINUM REDUCTION PLANTS

§ 62.6910 Identification of plan—negative declaration.

Letter from the Chief of the Air Pollution Control Division of the Department of Environmental Control submitted on March 16, 1984, certifying that there are no existing primary aluminum reduction plants in the State of

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§ 62.7600

Nebraska, subject to part 60, subpart B of this chapter.

[49 FR 43058, Oct. 26, 1984]

EMISSIONS FROM EXISTING MUNICIPAL WASTE COMBUSTORS WITH THE CAPACITY TO BURN GREATER THAN 250 TONS PER DAY OF MUNICIPAL SOLID WASTE

### § 62.6911 Identification of plan—negative declaration.

Letter from the Chief of the Air Quality Division of the Department of Environmental Control submitted April 1, 1991, certifying that there are no existing municipal waste combustors in the state of Nebraska subject to this 111(d) requirement.

[56 FR 56321, Nov. 4, 1991]

## Subpart DD—[Reserved]

## Subpart EE—New Hampshire

PLAN FOR THE CONTROL OF DESIGNATED POLLUTANTS FROM EXISTING FACILITIES (SECTION 111(d) PLAN)

### § 62.7325 Identification of plan.

(a) *Identification of plan.* New Hampshire Plan for the Control of Designated Pollutants from Existing Plants (Section 111(d) Plan).

(b) The plan was officially submitted as follows:

(1) Control of total reduced sulfur (TRS) emissions from existing kraft pulp mills, submitted on January 3, 1992.

(2) [Reserved]

(c) *Designated facilities.* The plan applies to existing facilities in the following categories of sources:

(1) Kraft pulp mills.

(2) [Reserved]

[57 FR 56858, Dec. 1, 1992]

FLUORIDE EMISSIONS FROM PHOSPHATE FERTILIZER PLANTS

### § 62.7350 Identification of plan—negative declaration.

The State Air Pollution Control Agency submitted on November 29, 1978, a letter certifying that there are no existing phosphate fertilizer plants

in the state subject to part 60, subpart B of this chapter.

[44 FR 54052, Sept 18, 1979]

SULFURIC ACID MIST EMISSIONS FROM SULFURIC ACID PRODUCTION UNITS

### § 62.7375 Identification of plan—negative declaration.

The State Air Pollution Control Agency submitted on November 29, 1978, a letter certifying that there are no existing sulfuric acid plants in the state subject to part 60, subpart B of this chapter.

[44 FR 54052, Sept 18, 1979]

FLUORIDE EMISSIONS FROM EXISTING PRIMARY ALUMINUM PLANTS

### § 62.7400 Identification of sources—negative declaration.

The State Air Pollution Control Agency submitted on January 3, 1989, a letter certifying that there are no existing primary aluminum reduction plants in the State subject to part 60, subpart B of this chapter.

[54 FR 9047, Mar. 3, 1989]

TOTAL REDUCED SULFUR FROM EXISTING KRAFT PULP MILLS

### § 62.7425 Identification of sources.

(a) The plan applies to the following existing kraft pulp mill:

(1) James River Corporation in Berlin.

(2) [Reserved]

(b) [Reserved]

[57 FR 56858, Dec. 1, 1992]

## Subpart FF—New Jersey

FLUORIDE EMISSIONS FROM PHOSPHATE FERTILIZER PLANTS

### § 62.7600 Identification of plan—negative declaration

The New Jersey Department of Environmental Protection submitted, on May 20, 1977, a letter certifying that there are no existing phosphate fertilizer plants in the State subject to part 60, subpart B of this chapter.

[44 FR 41180, July 16, 1979]

§ 62.7601

TOTAL REDUCED SULFUR EMISSIONS  
FROM KRAFT PULP MILLS

**§ 62.7601 Identification of plan—negative declaration.**

The New Jersey Department of Environmental Protection submitted, on October 18, 1979, a letter certifying that there are no existing kraft pulp mills in the State subject to part 60, subpart B of this chapter.

[45 FR 80826, Dec. 8, 1980; 46 FR 27342, May 19, 1981]

FLUORIDE EMISSIONS FROM PRIMARY  
ALUMINUM REDUCTION PLANTS

**§ 62.7602 Identification of plan—negative declaration.**

The New Jersey Department of Environmental Protection submitted, on September 29, 1980, a letter certifying that there are no existing primary aluminum plants in the State subject to part 60 subpart B of this chapter.

[46 FR 30479, June 9, 1981]

**Subpart GG—New Mexico**

SOURCE: 47 FR 10005, Mar. 9, 1982, unless otherwise noted.

**§ 62.7850 Identification of plan.**

(a) *Title of plan.* "State of New Mexico Designated Facility Plan" (§111(d)).

(b) The plan was officially submitted as follows:

(1) Sulfuric acid plants on May 15, 1981.

(c) Affected facilities: The plan includes the following facilities:

(1) Sulfuric acid plants.

SULFURIC ACID MIST EMISSIONS FROM  
SULFURIC ACID PLANTS

**§ 62.7851 Identification of sources.**

(a) The plan includes the following sources:

(1) Kerr-McGee Nuclear Corporation in McKinley County.

(2) Climax Chemical Corporation in Lea County.

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FLUORIDE EMISSIONS FROM PRIMARY  
ALUMINUM PLANTS

**§ 62.7852 Identification of plan—negative declaration.**

The New Mexico Environmental Improvement Division and the Albuquerque Air Pollution Control Division submitted letters of July 8, 1980 and September 23, 1980, respectively, certifying that there are no existing primary aluminum plants in the State subject to part 60, subpart B of this chapter.

TOTAL REDUCED SULFUR EMISSIONS  
FROM KRAFT PULP MILLS

**§ 62.7853 Identification of plan—negative declaration.**

The New Mexico Environmental Improvement Division and the Albuquerque Air Pollution Control Division submitted letters of November 5, 1979 and July 8, 1980, respectively, certifying that there are no existing kraft pulp mills in the State subject to part 60, subpart B of this chapter.

FLUORIDE EMISSIONS FROM PHOSPHATE  
FERTILIZER PLANTS

**§ 62.7854 Identification of plan—negative declaration.**

The State Department of Health and Social Services submitted on October 31, 1977, a letter certifying that there are no existing phosphate fertilizer plants in the State subject to part 60, subpart B of this chapter.

[43 FR 51393, Nov. 3, 1978. Redesignated at 47 FR 10005, Mar. 9, 1982]

**Subpart HH—New York**

FLUORIDE EMISSIONS FROM PHOSPHATE  
FERTILIZER PLANTS

**§ 62.8100 Identification of plan—negative declaration.**

The New York State Department of Environmental Conservation submitted, on May 12, 1977, a letter certifying that there are no existing phosphate fertilizer plants in the State subject to part 60, subpart B of this chapter.

[44 FR 41180, July 16, 1979]

SULFURIC ACID MIST EMISSIONS FROM  
EXISTING SULFURIC ACID PLANTS**§ 62.8102 Identification of plan.**

- (a) [Reserved]
- (b) The plan was officially submitted and approved as follows:
- (1) Part 224—"Sulfuric Acid and Nitric Acid Plants" of Title 6 of the New York Code of Rules and Regulations effective May 10, 1984.
- (2) Supplemental information submitted on March 29, 1985.
- (c) Identification of sources. The plan includes the following plants:
- (1) PVS Chemicals, Inc., Buffalo.
- (2) Eastman Kodak Company, Rochester.
- (d) The plan is approved with the provision that for existing sources any variance or compliance date extension from the provisions of part 224, "Sulfuric Acid and Nitric Acid Plants," or any text method other than specified in 40 CFR part 60, appendix A, approved by the Commissioner of Environmental Conservation must be submitted and approved as a plan revision.

[50 FR 41137, Oct. 9, 1985]

**Subpart II—North Carolina**

AUTHORITY: Secs. 110(a) and 111(d), Clean Air Act (42 U.S.C. 7410(a) and 7411(d)).

SOURCE: 48 FR 31403, July 8, 1983, unless otherwise noted.

PLAN FOR THE CONTROL OF DESIGNATED  
POLLUTANTS FROM EXISTING FACILITIES  
(SECTION 111(d) PLAN)**§ 62.8350 Identification of plan.**

- (a) *Identification of plan.* North Carolina Designated Facility Plan (Section 111(d) Plan).
- (b) The plan was officially submitted as follows:
- (1) Control of sulfuric acid mist emissions from existing sulfuric acid production units, submitted on October 27, 1978, and November 14, 1979.
- (2) Control of fluoride emissions from existing primary aluminum plants, submitted on April 16, and August 24, 1981.
- (3) Control of total reduced sulfur emissions from existing facilities at kraft pulp mills, submitted on May 2, 1980, and September 24, 1982.

(4) The following revisions to Title 15 of the North Carolina Administrative Code (15 NCAC) were submitted to EPA on July 18, 1986, following adoption by the North Carolina Environmental Management Commission on November 8, 1984: Revised regulations 2D.0517—Emissions From Plants Producing Sulfuric Acid, 2D.0528—Total Reduced Sulfur From Kraft Pulp Mills, and 2D.0529—Fluoride Emissions From Primary Aluminum Reduction Plants.

(5) A change to regulation 15 NCAC 2D.0528, Total Reduced Sulfur from Kraft Pulp Mills, was submitted to EPA April 14, 1987, following adoption by the North Carolina Environmental Management Commission on April 9, 1987.

(6) Revisions to regulations 15 NCAC 2D.0528(c), (f), (g), and (h)—Total Reduced Sulfur from Kraft Pulp Mills, and 2D.0529 (a) and (c)—Fluoride Emissions from Primary Aluminum Reduction Plants, were submitted by the North Carolina Department of Natural Resources and Community Development on May 2, 1988, following adoption by the North Carolina Environmental Management Commission on April 14, 1988.

(7) Regulation 1-144, Particulate Matter and Reduced Sulfur Emissions from Pulp and Paper Mills, except 1-144(f) and (g) for the Western North Carolina portion of the North Carolina SIP submitted on June 14, 1990.

(c) *Designated facilities.* The plan applies to existing facilities in the following categories of sources:

- (1) Sulfuric acid plants.
- (2) Primary aluminum plants.
- (3) Kraft pulp mills.

[48 FR 31403, July 8, 1983, as amended at 51 FR 41788, Nov. 19, 1986; 53 FR 31863, Aug. 22, 1988; 53 FR 49882, Dec. 12, 1988; 57 FR 4738, Feb. 7, 1992]

SULFURIC ACID MIST FROM EXISTING  
SULFURIC ACID PLANTS**§ 62.8351 Identification of sources.**

The plan applies to existing facilities at the following sulfuric acid plants:

- (a) Sulfur-burning plants operated by:
- (1) Texasgulf Inc. in Beaufort County,
  - (2) Swift Agricultural Chemical Company in Brunswick County,

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- (3) USS Agri-Chemicals in Brunswick County,
- (4) Wright Chemical Corporation in Columbus County, and
- (5) Northeast Chemical Company in New Hanover County.
- (b) There are no oleum plants.
- (c) There are no bound sulfur feed-stock plants.

FLUORIDE EMISSIONS FROM EXISTING PRIMARY ALUMINUM PLANTS

§ 62.8352 Identification of sources.

- (a) The plan applies to the following existing primary aluminum plant facilities.
  - (1) Two potlines of prebake cells at the Badin (Stanly County) plant of the Aluminum Corporation of America.

TOTAL REDUCED SULFUR EMISSIONS FROM KRAFT PULP MILLS

§ 62.8353 Identification of sources.

- The plan applies to existing facilities at the following kraft pulp mills:
- (a) Federal Paper Board in Riegelwood,
  - (b) Hoerner-Waldorf in Roanoke Rapids,
  - (c) Champion International in Canton,
  - (d) Weyerhaeuser in New Bern, and
  - (e) Weyerhaeuser in Plymouth.

[43 FR 51393, Nov. 3, 1978, as amended at 57 FR 4738, Feb. 7, 1992]

Subpart JJ—[Reserved]

Subpart KK—Ohio

FLUORIDE EMISSIONS FROM PHOSPHATE FERTILIZER PLANTS

§ 62.8850 Identification of plan—negative declaration.

The Ohio Environmental Protection Agency submitted on December 1, 1977, (resubmitted on April 1, 1985, and April 25, 1985) a letter certifying that there are no existing phosphate fertilizer plants in the State subject to part 60, subpart B of this chapter.

[50 FR 41137, Oct. 9, 1985]

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TOTAL REDUCED SULFUR EMISSIONS FROM KRAFT PULP MILLS

§ 62.8860 Identification of plan—disapproval.

On December 7, 1984, and April 23, 1986, Ohio submitted its plan for controlling total reduced sulfur from existing kraft pulp mills, including Rules 3745-73-01, 02, 03, and 04. The plan is being disapproved because:

- (a) The requirements of § 60.24(f) of this chapter are not met because the State failed to justify the application of emission standards less stringent than the Federal emission standards. Additionally, USEPA does not have a bubble policy applicable to 111(d) plans.
- (b) The plan does not contain monitoring requirements to ensure proper operation and maintenance of the affected facility as required by § 60.25(b) of this chapter.

[55 FR 19884, May 14, 1990]

Subpart LL—Oklahoma

PLAN FOR THE CONTROL OF DESIGNATED POLLUTANTS FROM EXISTING FACILITIES (SECTION 111(d) PLAN)

§ 62.9100 Identification of plan.

- (a) *Identification of plan.* Oklahoma Plan for Control of Designated Pollutants from Existing Facilities (Section 111(d) Plan).
- (b) The plan was officially submitted as follows:

(1) Control of sulfuric acid mist from existing sulfuric acid production plants submitted on December 5, 1985, with the corresponding regulation submitted by the Governor of Oklahoma on March 31, 1986.

(2) Control of total reduced sulfur from existing kraft pulp mills was submitted on November 17, 1987, and supplemented on June 1, 1988.

(c) *Designated facilities.* The plan applies to existing facilities in the following categories of sources.

- (1) Sulfuric acid production plants.
- (2) Kraft pulp mills.

[52 FR 3229, Feb. 3, 1987, as amended at 54 FR 24905, June 12, 1989]

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§ 62.9500

SULFURIC ACID MIST FROM EXISTING  
SULFURIC ACID PLANTS

**§62.9110 Identification of sources.**

(a) *Identification of sources.* The plan includes the following sulfuric acid production plants.

(1) National Zinc Co. in Bartlesville, Oklahoma.

(2) Tulsa Chemical Co. in Tulsa, Oklahoma.

[52 FR 3230, Feb. 3, 1987]

FLUORIDE EMISSIONS FROM PHOSPHATE  
FERTILIZER PLANTS

**§62.9120 Identification of plan—negative declaration.**

The State Department of Health submitted on October 25, 1977, a letter certifying that there are no existing phosphate fertilizer plants in the State subject to part 60, subpart B of this chapter.

[43 FR 51393, Nov. 3, 1978. Redesignated at 52 FR 3229, Feb. 3, 1987]

FLUORIDE EMISSIONS FROM PRIMARY  
ALUMINUM PLANTS

**§62.9130 Identification of plan—negative declaration.**

The Oklahoma State Department of Health submitted a letter on March 3, 1983, certifying that there are no existing primary aluminum reduction plants in the State of Oklahoma subject to 40 CFR part 60, subpart B, of this chapter.

[48 FR 29854, June 29, 1983. Redesignated at 52 FR 3229, Feb. 3, 1987]

TOTAL REDUCED SULFUR FROM EXISTING  
KRAFT PULP MILLS

**§62.9140 Identification of source.**

The plan includes the following kraft pulp mill:

(a) Weyerhaeuser Paper Company in Valliant, Oklahoma.

[54 FR 24905, June 12, 1989]

Subpart MM—Oregon

PLAN FOR THE CONTROL OF DESIGNATED  
POLLUTANTS FROM EXISTING FACILITIES  
(SECTION 111(d) PLAN)

**§62.9350 Identification of plan.**

(a) *Identification of plan.* Oregon Designated Facility Plan (Section 111(d) Plan).

(b) The plan was officially submitted as follows:

(1) Control of fluoride emissions from phosphate fertilizer plants, submitted by the Oregon State Department of Environmental Quality on June 1, 1977.

(2) Control of sulfuric acid mist emissions from sulfuric acid production units, submitted by the Oregon State Department of Environmental Quality on January 27, 1978.

(3) Control of fluoride emissions from primary aluminum reduction plants, submitted by the Oregon State Department of Environmental Quality on January 13, 1981 and August 9, 1982.

(c) *Designated facilities.* The plan applies to existing facilities in the following categories of sources:

(1) Phosphate fertilizer plants.

(2) Sulfuric acid production units.

(3) Primary aluminum reduction plants.

[48 FR 11118, Mar. 16, 1983]

FLUORIDE EMISSIONS FROM PRIMARY  
ALUMINUM REDUCTION PLANTS

**§62.9360 Identification of sources.**

The plan applies to existing facilities at the following primary aluminum reduction plants:

(a) Reynolds Metals Company in Troutdale, Oregon

(b) Martin-Marietta in The Dalles, Oregon.

[48 FR 11118, Mar. 16, 1983]

FLUORIDE EMISSIONS FROM PHOSPHATE  
FERTILIZER PLANTS

**§62.9500 Identification of sources.**

The Oregon State Department of Environmental Quality submitted on June 1, 1977, certification that there are no existing phosphate fertilizer

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plants in the State subject to part 60, subpart B of this chapter.

[44 FR 76281, Dec. 26, 1979. Redesignated and amended at 48 FR 11118, Mar. 16, 1983]

SULFURIC ACID MIST EMISSIONS FROM SULFURIC ACID PRODUCTION UNITS

§ 62.9501 Identification of sources.

The Oregon State Department of Environmental Quality submitted on January 27, 1978, certification that there are no existing sulfuric acid plants in the State subject to part 60, subpart B of this chapter.

[44 FR 76281, Dec. 26, 1979. Redesignated and amended at 48 FR 11118, Mar. 16, 1983]

Subpart NN—Pennsylvania

FLUORIDE EMISSIONS FROM PHOSPHATE FERTILIZER PLANTS

§ 62.9600 Identification of plan—negative declaration.

(a) The Pennsylvania Department of Environmental Resources submitted on December 1, 1977, a letter certifying that there are no existing phosphate fertilizer plants in the State subject to part 60, subpart B of this chapter.

(b) The Allegheny County Bureau of Air Pollution Control submitted a letter on August 18, 1978 certifying that there are no phosphate fertilizer plants in the County subject to part 60, subpart B of this chapter.

(c) The City of Philadelphia Air Management Services submitted on February 22, 1985, a letter certifying that there are no existing phosphate fertilizer plants in the City subject to part 60, subpart B of this chapter.

[47 FR 5900, Feb. 9, 1982, as amended at 50 FR 47734, Nov. 20, 1985]

SULFURIC ACID MIST EMISSIONS FROM EXISTING SULFURIC ACID PLANTS

§ 62.9601 Identification of plan.

(a) The Allegheny County Bureau of Air Pollution Control submitted a letter on August 18, 1978 certifying that there are no sulfuric acid plants in the County subject to part 60, subpart B of this chapter.

(b) A plan for the control of sulfuric acid mist emissions from existing sul-

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furic acid plants in the Commonwealth of Pennsylvania, submitted on May 30, 1978 and supplemented on August 17, 1981.

(c) The City of Philadelphia Air Management Services submitted on February 22, 1985, a letter certifying that there are no existing sulfuric acid plants in the City subject to part 60, subpart B of this chapter.

[47 FR 5900, Feb. 9, 1982, as amended at 50 FR 47735, Nov. 20, 1985]

TOTAL REDUCED SULFUR EMISSIONS FROM EXISTING KRAFT PULP MILLS

§ 62.9610 Identification of plan—negative declaration

(a) The Allegheny County Bureau of Air Pollution Control submitted a letter on February 14, 1985, certifying that there are no kraft pulp mills in the County subject to part 60, subpart B of this chapter.

(b) The City of Philadelphia Air Management Services submitted on February 22, 1985, a letter certifying that there are no existing kraft pulp mills in the City subject to part 60, subpart B of this chapter.

[50 FR 47735, Nov. 20, 1985]

FLUORIDE EMISSIONS FROM EXISTING PRIMARY ALUMINUM PLANTS

§ 62.9620 Identification of plan—negative declaration.

The Secretary, Department of Environmental Resources submitted on November 3, 1980, a letter certifying there are no primary aluminum plants in the Commonwealth of Pennsylvania subject to part 60, subpart B of this chapter.

[46 FR 41783, Aug. 18, 1981]

Subpart OO—Rhode Island

FLUORIDE EMISSIONS FROM PHOSPHATE FERTILIZER PLANTS

§ 62.9850 Identification of plan—negative declaration.

The State Department of Environmental Management submitted on November 14, 1977, a letter certifying that

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there are no existing phosphate fertilizer plants in the state subject to part 60, subpart B of this chapter.

[44 FR 54052, Sept. 18, 1979]

### SULFURIC ACID MIST EMISSIONS FROM SULFURIC ACID PRODUCTION UNITS

#### § 62.9875 Identification of plan—negative declaration.

The State Department of Environmental Management submitted on November 14, 1977, a letter certifying that there are no existing sulfuric acid plants in the state subject to part 60, subpart B of this chapter.

[44 FR 54052, Sept. 18, 1979]

### TOTAL REDUCED SULFUR EMISSIONS FROM EXISTING KRAFT PULP MILLS

#### § 62.9900 Identification of plan—negative declaration.

The State Department of Environmental Management submitted on July 26, 1979, a letter certifying that there are no existing kraft pulp mills in the State subject to part 60, subpart B of this chapter.

[54 FR 9047, Mar. 3, 1989]

### FLUORIDE EMISSIONS FROM EXISTING PRIMARY ALUMINUM PLANTS

#### § 62.9950 Identification of plan—negative declaration.

The State Department of Environmental Management submitted on December 8, 1989, a letter certifying that there are no existing primary aluminum reduction plants in the State subject to part 60, subpart B of this chapter.

[54 FR 9047, Mar. 3, 1989]

### MUNICIPAL WASTE COMBUSTOR EMISSIONS FROM EXISTING MUNICIPAL WASTE COMBUSTORS WITH THE CAPACITY TO COMBUST GREATER THAN 250 TONS PER DAY OF MUNICIPAL SOLID WASTE

#### § 62.9975 Identification of plan—negative declaration.

On February 5, 1992, the Rhode Island Department of Environmental Management submitted a letter certifying that there are no existing municipal waste

combustors in the State subject to the emission guidelines published on February 11, 1991 (56 FR 5514) pursuant to part 60, subpart B of this chapter.

[57 FR 44692, Sept. 29, 1992]

## Subpart PP—South Carolina

### PLAN FOR THE CONTROL OF DESIGNATED POLLUTANTS FROM EXISTING FACILITIES (SECTION 111(d) PLAN)

SOURCE: 47 FR 29236, July 6, 1982, unless otherwise noted.

#### § 62.10100 Identification of plan.

(a) *Identification of plan.* South Carolina Designated Facility Plan (Section 111(d) Plan).

(b) The plan was officially submitted as follows:

(1) Implementation Plan for Control of Designated Pollutants, including sulfuric acid mist from sulfuric acid plants and total reduced sulfur from kraft pulp mills, submitted on December 22, 1981.

(2) A revision to South Carolina's 111(d) plan for total reduced sulfur which was submitted on December 13, 1984. This revision approved an alternate emission limit for the digesters and an extended compliance schedule for the evaporators at Stone Container Corporation.

(c) *Designated facilities.* The plan applies to existing facilities in the following categories sources:

(1) Sulfuric acid plants.

(2) Kraft pulp mills.

[47 FR 29236, July 6, 1982, as amended at 50 FR 33037, Aug. 16, 1985]

### SULFURIC ACID MIST FROM SULFURIC ACID PLANTS

#### § 62.10110 Identification of sources.

The plan applies to existing plants at the following locations:

(1) Sulfur-burning plants of W. R. Grace and Company's plant in Charleston.

(2) There are no bound sulfur or oleum plants.

§ 62.10120

TOTAL REDUCED SULFUR EMISSIONS  
FROM KRAFT PULP MILLS

§ 62.10120 Identification of sources.

The plan applies to existing facilities at the following kraft pulp mills:

- (1) Westvaco in North Charleston.
- (2) International Paper Company in Georgetown.
- (3) Bowater Carolina Company in Cawaba.
- (4) Stone Container Corporation in Florence.

[47 FR 29236, July 6, 1982, as amended at 50 FR 33037, Aug. 16, 1985]

FLUORIDE EMISSIONS FROM PHOSPHATE  
FERTILIZER PLANTS

§ 62.10130 Identification of plan—negative declaration.

The South Carolina Department of Health and Environmental Control submitted on November 2, 1977, a letter certifying that there are no existing phosphate fertilizer plants in the State subject to part 60, subpart B, of this chapter.

FLUORIDE EMISSIONS FROM EXISTING  
PRIMARY ALUMINUM REDUCTION PLANTS

§ 62.10140 Identification of plan—negative declaration.

The South Carolina Department of Health and Environmental Control submitted on May 3, 1983, a letter certifying that there are no existing primary aluminum plants in the State which are subject to part 60 subpart B of this chapter.

[50 FR 33037, Aug. 16, 1985]

Subpart RR—Tennessee

FLUORIDE EMISSIONS FROM PHOSPHATE  
FERTILIZER PLANTS

§ 62.10602 Identification of sources—Negative declaration.

The Tennessee Department of Health and Environment on April 4, 1985, submitted a letter certifying that there are no existing phosphate fertilizer plants in the State subject to part 60, subpart B of this chapter.

[50 FR 26204, June 25, 1985]

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TOTAL REDUCED SULFUR EMISSIONS  
FROM EXISTING KRAFT PULP MILLS

§ 62.10625 Identification of plan.

On June 25, 1993, the State submitted revisions to the Tennessee State Implementation Plan (SIP). These were revisions to the process gaseous emission standards. These revisions incorporate changes to Rule 1200–3–7–.07, subparagraphs (4)(a) and (4)(b) of the Tennessee SIP which bring this into conformance with the requirements of 40 CFR part 62, subpart I.

[61 FR 29667, June 12, 1996]

EFFECTIVE DATE NOTE: At 61 FR 29667, June 12, 1996, § 62.10625 and the undesignated center heading preceding it were added, effective Aug. 12, 1996.

Subpart SS—[Reserved]

Subpart TT—Utah

FLUORIDES FROM EXISTING PHOSPHATE  
FERTILIZER PLANTS

§ 62.11100 Identification of plan.

(a) *Title of plan.* "Control of Fluorides from Existing Phosphate Plants".

(b) The plan was officially submitted on March 1, 1982.

(c) *Identification of source.* The plan includes the Chevron Chemical Company's phosphate fertilizer plant in Magna, Utah.

[47 FR 25336, June 11, 1982; 48 FR 10316, Mar. 11, 1983]

Subpart UU—Vermont

FLUORIDE EMISSIONS FROM PHOSPHATE  
FERTILIZER PLANTS

§ 62.11350 Identification of plan—negative declaration.

The State Agency of Environmental Conservation submitted on April 11, 1978, a letter certifying that there are no existing phosphate fertilizer plants in the state subject to part 60, subpart B of this chapter.

[44 FR 54052, Sept. 18, 1979]

Environmental Protection Agency

§ 62.11601

SULFURIC ACID MIST EMISSIONS FROM  
SULFURIC ACID PRODUCTION UNITS

**§ 62.11375 Identification of plan—negative declaration.**

The State Agency of Environmental Conservation submitted on April 11, 1978, a letter certifying that there are no existing sulfuric acid plants in the state subject to part 60, subpart B of this chapter.

[44 FR 54053, Sept. 18, 1979]

TOTAL REDUCED SULFUR EMISSIONS  
FROM EXISTING KRAFT PULP MILLS

**§ 62.11400 Identification of plan—negative declaration.**

The State Agency of Environmental Conservation submitted on August 2, 1979, a letter certifying that there are no existing kraft pulp mills in the State subject to part 60, subject B of this chapter.

[54 FR 9047, Mar. 3, 1989]

FLUORIDE EMISSIONS FROM EXISTING  
PRIMARY ALUMINUM PLANTS

**§ 62.11425 Identification of plan—negative declaration.**

The State Agency of Environmental Conservation submitted on January 4, 1989, a letter certifying that there are no existing primary aluminum reduction plants in the State subject to part 60, subpart B of this chapter.

[54 FR 9047, Mar. 3, 1989]

MUNICIPAL WASTE COMBUSTOR EMISSIONS FROM EXISTING MUNICIPAL WASTE COMBUSTORS WITH THE CAPACITY TO COMBUST GREATER THAN 250 TONS PER DAY OF MUNICIPAL SOLID WASTE

**§ 62.11450 Identification of plan—negative declaration.**

On September 18, 1992, the Vermont Agency of Natural Resources submitted a letter certifying that there are no existing municipal waste combustors in the State subject to the emission guidelines published on February 11, 1991 (56 FR 5514) pursuant to part 60, subpart B of this chapter.

[57 FR 44692, Sept. 29, 1992]

Subpart VV—Virginia

FLUORIDE EMISSIONS FROM PHOSPHATE  
FERTILIZER PLANTS

**§ 62.11600 Identification of plan—negative declaration.**

The Secretary of Commerce and Resources, Office of the Governor submitted on May 13, 1977, a letter certifying that there are no existing phosphate fertilizer plants in the State subject to part 60, subpart B of this chapter.

[45 FR 43412, June 27, 1980]

SULFURIC ACID MIST EMISSIONS FROM  
EXISTING SULFURIC ACID PLANTS

**§ 62.11601 Identification of plan.**

(a) *Title of plan.* Commonwealth of Virginia State Implementation Plan under section 111(d) of the Clean Air Act for the Designated Facility—Sulfuric Acid Plants.

(b) The plan was officially submitted by the Secretary of Commerce and Resources, Commonwealth of Virginia, on September 29, 1978.

(c) [Reserved]

(d) *Identification of sources.* The plan includes the following sulfuric acid plants:

Allied Chemical, Hopewell  
Allied Chemical, Front Royal  
Du Pont, James River  
Smith Douglas, Chesapeake  
U.S. Army Ammo Plant, Radford  
Weaver Fertilizer, Norfolk

(e) A variance issued to the E. I. du Pont de Nemours and Company James River Sulfuric Acid Plant located in Chesterfield County, Virginia exempting the plant from section 4.51(c)(2) until December 15, 1981, submitted on October 21, 1980 by the Virginia Secretary of Commerce and Resources.

(f) [Reserved]

(g) Section 4.51(c)(2) is replaced with Rule 4-21 (Emission Standards from Sulfuric Acid Production Units), section 120-04-2104 (Standard for Sulfuric Acid Mist), effective February 1, 1985. This revision was submitted on February 14, 1985 by the Commonwealth of Virginia.

[46 FR 55973, Nov. 13, 1981, as amended at 46 FR 55975, Nov. 13, 1981; 60 FR 50105, Sept. 28, 1995]

§ 62.11620

TOTAL REDUCED SULFUR EMISSIONS  
FROM EXISTING KRAFT PULP MILLS

**§§ 62.11610—62.11619 [Reserved—plan  
not submitted]**

FLUORIDE EMISSIONS FROM EXISTING  
PRIMARY ALUMINUM PLANTS

**§ 62.11620 Identification of plan—nega-  
tive declaration.**

The Commonwealth of Virginia, Office of the Governor, submitted on July 9, 1980, a letter certifying that there are no designated facilities in the Commonwealth subject to the emission guidelines set forth in the Final Guideline Document for the Control of Fluoride Emissions from Existing Primary Aluminum Plants.

[46 FR 41783, Aug. 18, 1981]

**Subpart WW—Washington**

FLUORIDE EMISSIONS FROM PHOSPHATE  
FERTILIZER PLANTS

**§ 62.11850 Identification of plan—nega-  
tive declaration.**

The Washington State Department of Ecology submitted on August 29, 1979, certification that there are no existing phosphate fertilizer plants in the State subject to part 60, subpart B of this chapter.

[44 FR 76281, Dec. 26, 1979]

**Subpart XX—West Virginia**

FLUORIDE EMISSIONS FROM PHOSPHATE  
FERTILIZER PLANTS

**§ 62.12100 Identification of plan—nega-  
tive declaration.**

The West Virginia Air Pollution Control Commission submitted on October 25, 1977, a letter certifying that there are no existing phosphate fertilizer plants in the State subject to part 60, subpart B of this chapter.

[45 FR 43412, June 27, 1980]

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**Subpart YY—Wisconsin**

FLUORIDE EMISSIONS FROM PHOSPHATE  
FERTILIZER PLANTS

**§ 62.12350 Identification of plan—nega-  
tive declaration.**

The State Department of Natural Resources submitted on May 24, 1977, a letter certifying that there are no existing phosphate fertilizer plants in the State subject to part 60, subpart B of this chapter.

**Subparts ZZ—AAA—[Reserved]**

**Subpart BBB—Puerto Rico**

FLUORIDE EMISSIONS FROM PHOSPHATE  
FERTILIZER PLANTS

**§ 62.13100 Identification of plan—nega-  
tive declaration**

The Commonwealth Environmental Quality Board submitted, on January 31, 1978, a letter certifying that there are no existing phosphate fertilizer plants in Commonwealth subject to part 60, subpart B of this chapter.

[44 FR 41180, July 16, 1979]

SULFURIC ACID MIST EMISSIONS FROM  
SULFURIC ACID PLANTS

**§ 62.13101 Identification of plan—nega-  
tive declaration.**

The Commonwealth Environmental Quality Board submitted, on January 31, 1978, a letter certifying that there are no existing sulfuric acid plants in the Commonwealth subject to part 60, subpart B of this chapter.

[45 FR 37432, June 3, 1980; 46 FR 27342, May 19, 1981]

FLUORIDE EMISSIONS FROM PRIMARY  
ALUMINUM REDUCTION PLANTS

**§ 62.13102 Identification of plan—nega-  
tive declaration.**

The Commonwealth of Puerto Rico submitted on April 28, 1981, a letter certifying that there are no existing primary aluminum plants in the Commonwealth subject to part 60 subpart B of this chapter.

[46 FR 43834, Sept. 1, 1981]

TOTAL REDUCED SULFUR FROM KRAFT  
PULP MILLS**§ 62.13103 Identification of plan—negative declaration.**

The Commonwealth of Puerto Rico submitted on April 28, 1981, a letter certifying that there are no existing kraft pulp mills in the Commonwealth subject to part 60 subpart B of this chapter.

[46 FR 43834, Sept. 1, 1981]

**Subpart CCC—Virgin Islands**FLUORIDE EMISSIONS FROM PHOSPHATE  
FERTILIZER PLANTS**§ 62.13350 Identification of plan—negative declaration.**

The Territory Department of Conservation and Cultural Affairs submitted, on November 3, 1977, a letter certifying that there are no existing phosphate fertilizer plants in the Territory subject to part 60, subpart B of this chapter.

[44 FR 41181, July 16, 1979]

SULFURIC ACID MIST EMISSIONS FROM  
SULFURIC ACID PLANTS**§ 62.13351 Identification of plan—negative declaration.**

The Territory Department of Conservation and Cultural Affairs submitted, on November 8, 1977, a letter certifying that there are no existing sulfuric acid plants in the Territory subject to part 60, subpart B of this chapter.

[45 FR 37432, June 3, 1980; 46 FR 27342, May 19, 1981]

TOTAL REDUCED SULFUR EMISSIONS  
FROM KRAFT PULP MILLS**§ 62.13352 Identification of plan—negative declaration.**

The Virgin Islands Department of Conservation and Cultural Affairs submitted, on July 31, 1979, a letter certifying that there are no existing kraft pulp mills in the Territory subject to part 60, subpart B of this chapter.

[45 FR 80826, Dec. 8, 1980; 46 FR 27342, May 19, 1981]

FLUORIDE EMISSIONS FROM PRIMARY  
ALUMINUM REDUCTION PLANTS**§ 62.13353 Identification of plan—negative declaration.**

The Virgin Islands Department of Conservation and Cultural Affairs submitted, on July 21, 1980, a letter certifying that there are no primary aluminum plants in the Territory subject to part 60, subpart B of this chapter.

[46 FR 30497, June 9, 1981]

**PART 63—NATIONAL EMISSION  
STANDARDS FOR HAZARDOUS  
AIR POLLUTANTS FOR SOURCE  
CATEGORIES****Subpart A—General Provisions**

## Sec.

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- 63.2 Definitions.
- 63.3 Units and abbreviations.
- 63.4 Prohibited activities and circumvention.
- 63.5 Construction and reconstruction.
- 63.6 Compliance with standards and maintenance requirements.
- 63.7 Performance testing requirements.
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- 63.12 State authority and delegations.
- 63.13 Addresses of State air pollution control agencies and EPA Regional Offices.
- 63.14 Incorporations by reference.
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**Subpart B—Requirements for Control Technology Determinations for Major Sources in Accordance With Clean Air Act Sections, Sections 112(g) and 112(j)**

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- 63.50 Applicability.
- 63.51 Definitions.
- 63.52 Approval process for new and existing emission units.
- 63.53 Application content for case-by-case MACT determinations.
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63.56 Requirements for case-by-case determination of equivalent emission limitations after promulgation of a subsequent MACT standard.

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63.101 Definitions.  
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TABLE 2 TO SUBPART F—ORGANIC HAZARDOUS AIR POLLUTANTS

TABLE 3 TO SUBPART F—GENERAL PROVISIONS APPLICABILITY TO SUBPARTS F, G, AND H

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#### APPENDIX D TO PART 63—ALTERNATIVE VALIDATION PROCEDURE FOR EPA WASTE AND WASTEWATER METHODS

AUTHORITY: 42 U.S.C. 7401 *et seq.*

SOURCE: 57 FR 61992, Dec. 29, 1992, unless otherwise noted.

### Subpart A—General Provisions

SOURCE: 59 FR 12430, Mar. 16, 1994, unless otherwise noted.

### § 63.1 Applicability.

(a) *General.* (1) Terms used throughout this part are defined in § 63.2 or in the Clean Air Act (Act) as amended in 1990, except that individual subparts of this part may include specific definitions in addition to or that supersede definitions in § 63.2.

(2) This part contains national emission standards for hazardous air pollutants (NESHAP) established pursuant to section 112 of the Act as amended November 15, 1990. These standards regulate specific categories of stationary sources that emit (or have the potential to emit) one or more hazardous air pollutants listed in this part pursuant to section 112(b) of the Act. This section explains the applicability of such standards to sources affected by them. The standards in this part are independent of NESHAP contained in 40 CFR part 61. The NESHAP in part 61 promulgated by signature of the Administrator before November 15, 1990 (i.e., the date of enactment of the Clean Air Act Amendments of 1990) remain in effect until they are amended, if appropriate, and added to this part.

(3) No emission standard or other requirement established under this part shall be interpreted, construed, or applied to diminish or replace the requirements of a more stringent emission limitation or other applicable requirement established by the Administrator pursuant to other authority of the Act (including those requirements in part 60 of this chapter), or a standard issued under State authority.

(4) The provisions of this subpart (i.e., subpart A of this part) apply to owners or operators who are subject to subsequent subparts of this part, except when otherwise specified in a particular subpart or in a relevant standard. The general provisions in subpart A eliminate the repetition of requirements applicable to all owners or operators affected by this part. The general provisions in subpart A do not apply to regulations developed pursuant to section 112(r) of the amended Act, unless otherwise specified in those regulations.

(5) [Reserved]

(6) To obtain the most current list of categories of sources to be regulated

under section 112 of the Act, or to obtain the most recent regulation promulgation schedule established pursuant to section 112(e) of the Act, contact the Office of the Director, Emission Standards Division, Office of Air Quality Planning and Standards, U.S. EPA (MD-13), Research Triangle Park, North Carolina 27711.

(7) Subpart D of this part contains regulations that address procedures for an owner or operator to obtain an extension of compliance with a relevant standard through an early reduction of emissions of hazardous air pollutants pursuant to section 112(i)(5) of the Act.

(8) Subpart E of this part contains regulations that provide for the establishment of procedures consistent with section 112(l) of the Act for the approval of State rules or programs to implement and enforce applicable Federal rules promulgated under the authority of section 112. Subpart E also establishes procedures for the review and withdrawal of section 112 implementation and enforcement authorities granted through a section 112(l) approval.

(9) [Reserved]

(10) For the purposes of this part, time periods specified in days shall be measured in calendar days, even if the word "calendar" is absent, unless otherwise specified in an applicable requirement.

(11) For the purposes of this part, if an explicit postmark deadline is not specified in an applicable requirement for the submittal of a notification, application, test plan, report, or other written communication to the Administrator, the owner or operator shall postmark the submittal on or before the number of days specified in the applicable requirement. For example, if a notification must be submitted 15 days before a particular event is scheduled to take place, the notification shall be postmarked on or before 15 days preceding the event; likewise, if a notification must be submitted 15 days after a particular event takes place, the notification shall be postmarked on or before 15 days following the end of the event. The use of reliable non-Government mail carriers that provide indications of verifiable delivery of information required to be submitted to the

Administrator, similar to the postmark provided by the U.S. Postal Service, or alternative means of delivery agreed to by the permitting authority, is acceptable.

(12) Notwithstanding time periods or postmark deadlines specified in this part for the submittal of information to the Administrator by an owner or operator, or the review of such information by the Administrator, such time periods or deadlines may be changed by mutual agreement between the owner or operator and the Administrator. Procedures governing the implementation of this provision are specified in §63.9(i).

(13) Special provisions set forth under an applicable subpart of this part or in a relevant standard established under this part shall supersede any conflicting provisions of this subpart.

(14) Any standards, limitations, prohibitions, or other federally enforceable requirements established pursuant to procedural regulations in this part [including, but not limited to, equivalent emission limitations established pursuant to section 112(g) of the Act] shall have the force and effect of requirements promulgated in this part and shall be subject to the provisions of this subpart, except when explicitly specified otherwise.

(b) *Initial applicability determination for this part.* (1) The provisions of this part apply to the owner or operator of any stationary source that—

(i) Emits or has the potential to emit any hazardous air pollutant listed in or pursuant to section 112(b) of the Act; and

(ii) Is subject to any standard, limitation, prohibition, or other federally enforceable requirement established pursuant to this part.

(2) In addition to complying with the provisions of this part, the owner or operator of any such source may be required to obtain an operating permit issued to stationary sources by an authorized State air pollution control agency or by the Administrator of the U.S. Environmental Protection Agency (EPA) pursuant to title V of the Act (42 U.S.C. 7661). For more information about obtaining an operating permit, see part 70 of this chapter.

(3) An owner or operator of a stationary source that emits (or has the potential to emit, without considering controls) one or more hazardous air pollutants who determines that the source is not subject to a relevant standard or other requirement established under this part, shall keep a record of the applicability determination as specified in §63.10(b)(3) of this subpart.

(c) *Applicability of this part after a relevant standard has been set under this part.* (1) If a relevant standard has been established under this part, the owner or operator of an affected source shall comply with the provisions of this subpart and the provisions of that standard, except as specified otherwise in this subpart or that standard.

(2) If a relevant standard has been established under this part, the owner or operator of an affected source may be required to obtain a title V permit from the permitting authority in the State in which the source is located. Emission standards promulgated in this part for area sources will specify whether—

(i) States will have the option to exclude area sources affected by that standard from the requirement to obtain a title V permit (i.e., the standard will exempt the category of area sources altogether from the permitting requirement);

(ii) States will have the option to defer permitting of area sources in that category until the Administrator takes rulemaking action to determine applicability of the permitting requirements; or

(iii) Area sources affected by that emission standard are immediately subject to the requirement to apply for and obtain a title V permit in all States. If a standard fails to specify what the permitting requirements will be for area sources affected by that standard, then area sources that are subject to the standard will be subject to the requirement to obtain a title V permit without deferral. If the owner or operator is required to obtain a title V permit, he or she shall apply for such permit in accordance with part 70 of this chapter and applicable State regulations, or in accordance with the regulations contained in this chapter to im-

plement the Federal title V permit program (42 U.S.C. 7661), whichever regulations are applicable.

(3) [Reserved]

(4) If the owner or operator of an existing source obtains an extension of compliance for such source in accordance with the provisions of subpart D of this part, the owner or operator shall comply with all requirements of this subpart except those requirements that are specifically overridden in the extension of compliance for that source.

(5) If an area source that otherwise would be subject to an emission standard or other requirement established under this part if it were a major source subsequently increases its emissions of hazardous air pollutants (or its potential to emit hazardous air pollutants) such that the source is a major source that is subject to the emission standard or other requirement, such source also shall be subject to the notification requirements of this subpart.

(d) [Reserved]

(e) *Applicability of permit program before a relevant standard has been set under this part.* After the effective date of an approved permit program in the State in which a stationary source is (or would be) located, the owner or operator of such source may be required to obtain a title V permit from the permitting authority in that State (or revise such a permit if one has already been issued to the source) before a relevant standard is established under this part. If the owner or operator is required to obtain (or revise) a title V permit, he/she shall apply to obtain (or revise) such permit in accordance with the regulations contained in part 70 of this chapter and applicable State regulations, or the regulations codified in this chapter to implement the Federal title V permit program (42 U.S.C. 7661), whichever regulations are applicable.

#### § 63.2 Definitions.

The terms used in this part are defined in the Act or in this section as follows:

*Act* means the Clean Air Act (42 U.S.C. 7401 *et seq.*, as amended by Pub. L. 101-549, 104 Stat. 2399).

*Actual emissions* is defined in subpart D of this part for the purpose of granting a compliance extension for an early reduction of hazardous air pollutants.

*Administrator* means the Administrator of the United States Environmental Protection Agency or his or her authorized representative (e.g., a State that has been delegated the authority to implement the provisions of this part).

*Affected source*, for the purposes of this part, means the stationary source, the group of stationary sources, or the portion of a stationary source that is regulated by a relevant standard or other requirement established pursuant to section 112 of the Act. Each relevant standard will define the “affected source” for the purposes of that standard. The term “affected source,” as used in this part, is separate and distinct from any other use of that term in EPA regulations such as those implementing title IV of the Act. Sources regulated under part 60 or part 61 of this chapter are not affected sources for the purposes of part 63.

*Alternative emission limitation* means conditions established pursuant to sections 112(i)(5) or 112(i)(6) of the Act by the Administrator or by a State with an approved permit program.

*Alternative emission standard* means an alternative means of emission limitation that, after notice and opportunity for public comment, has been demonstrated by an owner or operator to the Administrator’s satisfaction to achieve a reduction in emissions of any air pollutant at least equivalent to the reduction in emissions of such pollutant achieved under a relevant design, equipment, work practice, or operational emission standard, or combination thereof, established under this part pursuant to section 112(h) of the Act.

*Alternative test method* means any method of sampling and analyzing for an air pollutant that is not a test method in this chapter and that has been demonstrated to the Administrator’s satisfaction, using Method 301 in Appendix A of this part, to produce results adequate for the Administrator’s determination that it may be used in place of a test method specified in this part.

*Approved permit program* means a State permit program approved by the Administrator as meeting the requirements of part 70 of this chapter or a Federal permit program established in this chapter pursuant to title V of the Act (42 U.S.C. 7661).

*Area source* means any stationary source of hazardous air pollutants that is not a major source as defined in this part.

*Commenced* means, with respect to construction or reconstruction of a stationary source, that an owner or operator has undertaken a continuous program of construction or reconstruction or that an owner or operator has entered into a contractual obligation to undertake and complete, within a reasonable time, a continuous program of construction or reconstruction.

*Compliance date* means the date by which an affected source is required to be in compliance with a relevant standard, limitation, prohibition, or any federally enforceable requirement established by the Administrator (or a State with an approved permit program) pursuant to section 112 of the Act.

*Compliance plan* means a plan that contains all of the following:

(1) A description of the compliance status of the affected source with respect to all applicable requirements established under this part;

(2) A description as follows: (i) For applicable requirements for which the source is in compliance, a statement that the source will continue to comply with such requirements;

(ii) For applicable requirements that the source is required to comply with by a future date, a statement that the source will meet such requirements on a timely basis;

(iii) For applicable requirements for which the source is not in compliance, a narrative description of how the source will achieve compliance with such requirements on a timely basis;

(3) A compliance schedule, as defined in this section; and

(4) A schedule for the submission of certified progress reports no less frequently than every 6 months for affected sources required to have a schedule of compliance to remedy a violation.

*Compliance schedule* means: (1) In the case of an affected source that is in compliance with all applicable requirements established under this part, a statement that the source will continue to comply with such requirements; or

(2) In the case of an affected source that is required to comply with applicable requirements by a future date, a statement that the source will meet such requirements on a timely basis and, if required by an applicable requirement, a detailed schedule of the dates by which each step toward compliance will be reached; or

(3) In the case of an affected source not in compliance with all applicable requirements established under this part, a schedule of remedial measures, including an enforceable sequence of actions or operations with milestones and a schedule for the submission of certified progress reports, where applicable, leading to compliance with a relevant standard, limitation, prohibition, or any federally enforceable requirement established pursuant to section 112 of the Act for which the affected source is not in compliance. This compliance schedule shall resemble and be at least as stringent as that contained in any judicial consent decree or administrative order to which the source is subject. Any such schedule of compliance shall be supplemental to, and shall not sanction non-compliance with, the applicable requirements on which it is based.

*Construction* means the on-site fabrication, erection, or installation of an affected source.

*Continuous emission monitoring system* (CEMS) means the total equipment that may be required to meet the data acquisition and availability requirements of this part, used to sample, condition (if applicable), analyze, and provide a record of emissions.

*Continuous monitoring system* (CMS) is a comprehensive term that may include, but is not limited to, continuous emission monitoring systems, continuous opacity monitoring systems, continuous parameter monitoring systems, or other manual or automatic monitoring that is used for demonstrating compliance with an applica-

ble regulation on a continuous basis as defined by the regulation.

*Continuous opacity monitoring system* (COMS) means a continuous monitoring system that measures the opacity of emissions.

*Continuous parameter monitoring system* means the total equipment that may be required to meet the data acquisition and availability requirements of this part, used to sample, condition (if applicable), analyze, and provide a record of process or control system parameters.

*Effective date* means: (1) With regard to an emission standard established under this part, the date of promulgation in the FEDERAL REGISTER of such standard; or

(2) With regard to an alternative emission limitation or equivalent emission limitation determined by the Administrator (or a State with an approved permit program), the date that the alternative emission limitation or equivalent emission limitation becomes effective according to the provisions of this part. The effective date of a permit program established under title V of the Act (42 U.S.C. 7661) is determined according to the regulations in this chapter establishing such programs.

*Emission standard* means a national standard, limitation, prohibition, or other regulation promulgated in a subpart of this part pursuant to sections 112(d), 112(h), or 112(f) of the Act.

*Emissions averaging* is a way to comply with the emission limitations specified in a relevant standard, whereby an affected source, if allowed under a subpart of this part, may create emission credits by reducing emissions from specific points to a level below that required by the relevant standard, and those credits are used to offset emissions from points that are not controlled to the level required by the relevant standard.

*EPA* means the United States Environmental Protection Agency.

*Equivalent emission limitation* means the maximum achievable control technology emission limitation (MACT emission limitation) for hazardous air pollutants that the Administrator (or a State with an approved permit program) determines on a case-by-case

basis, pursuant to section 112(g) or section 112(j) of the Act, to be equivalent to the emission standard that would apply to an affected source if such standard had been promulgated by the Administrator under this part pursuant to section 112(d) or section 112(h) of the Act.

*Excess emissions and continuous monitoring system performance report* is a report that must be submitted periodically by an affected source in order to provide data on its compliance with relevant emission limits, operating parameters, and the performance of its continuous parameter monitoring systems.

*Existing source* means any affected source that is not a new source.

*Federally enforceable* means all limitations and conditions that are enforceable by the Administrator and citizens under the Act or that are enforceable under other statutes administered by the Administrator. Examples of federally enforceable limitations and conditions include, but are not limited to:

(1) Emission standards, alternative emission standards, alternative emission limitations, and equivalent emission limitations established pursuant to section 112 of the Act as amended in 1990;

(2) New source performance standards established pursuant to section 111 of the Act, and emission standards established pursuant to section 112 of the Act before it was amended in 1990;

(3) All terms and conditions in a title V permit, including any provisions that limit a source's potential to emit, unless expressly designated as not federally enforceable;

(4) Limitations and conditions that are part of an approved State Implementation Plan (SIP) or a Federal Implementation Plan (FIP);

(5) Limitations and conditions that are part of a Federal construction permit issued under 40 CFR 52.21 or any construction permit issued under regulations approved by the EPA in accordance with 40 CFR part 51;

(6) Limitations and conditions that are part of an operating permit issued pursuant to a program approved by the EPA into a SIP as meeting the EPA's minimum criteria for Federal enforce-

ability, including adequate notice and opportunity for EPA and public comment prior to issuance of the final permit and practicable enforceability;

(7) Limitations and conditions in a State rule or program that has been approved by the EPA under subpart E of this part for the purposes of implementing and enforcing section 112; and

(8) Individual consent agreements that the EPA has legal authority to create.

*Fixed capital cost* means the capital needed to provide all the depreciable components of an existing source.

*Fugitive emissions* means those emissions from a stationary source that could not reasonably pass through a stack, chimney, vent, or other functionally equivalent opening. Under section 112 of the Act, all fugitive emissions are to be considered in determining whether a stationary source is a major source.

*Hazardous air pollutant* means any air pollutant listed in or pursuant to section 112(b) of the Act.

*Issuance* of a part 70 permit will occur, if the State is the permitting authority, in accordance with the requirements of part 70 of this chapter and the applicable, approved State permit program. When the EPA is the permitting authority, issuance of a title V permit occurs immediately after the EPA takes final action on the final permit.

*Lesser quantity* means a quantity of a hazardous air pollutant that is or may be emitted by a stationary source that the Administrator establishes in order to define a major source under an applicable subpart of this part.

*Major source* means any stationary source or group of stationary sources located within a contiguous area and under common control that emits or has the potential to emit considering controls, in the aggregate, 10 tons per year or more of any hazardous air pollutant or 25 tons per year or more of any combination of hazardous air pollutants, unless the Administrator establishes a lesser quantity, or in the case of radionuclides, different criteria from those specified in this sentence.

*Malfunction* means any sudden, infrequent, and not reasonably preventable

failure of air pollution control equipment, process equipment, or a process to operate in a normal or usual manner. Failures that are caused in part by poor maintenance or careless operation are not malfunctions.

*New source* means any affected source the construction or reconstruction of which is commenced after the Administrator first proposes a relevant emission standard under this part.

*One-hour period*, unless otherwise defined in an applicable subpart, means any 60-minute period commencing on the hour.

*Opacity* means the degree to which emissions reduce the transmission of light and obscure the view of an object in the background. For continuous opacity monitoring systems, opacity means the fraction of incident light that is attenuated by an optical medium.

*Owner or operator* means any person who owns, leases, operates, controls, or supervises a stationary source.

*Part 70 permit* means any permit issued, renewed, or revised pursuant to part 70 of this chapter.

*Performance audit* means a procedure to analyze blind samples, the content of which is known by the Administrator, simultaneously with the analysis of performance test samples in order to provide a measure of test data quality.

*Performance evaluation* means the conduct of relative accuracy testing, calibration error testing, and other measurements used in validating the continuous monitoring system data.

*Performance test* means the collection of data resulting from the execution of a test method (usually three emission test runs) used to demonstrate compliance with a relevant emission standard as specified in the performance test section of the relevant standard.

*Permit modification* means a change to a title V permit as defined in regulations codified in this chapter to implement title V of the Act (42 U.S.C. 7661).

*Permit program* means a comprehensive State operating permit system established pursuant to title V of the Act (42 U.S.C. 7661) and regulations codified in part 70 of this chapter and applicable State regulations, or a comprehensive Federal operating permit system estab-

lished pursuant to title V of the Act and regulations codified in this chapter.

*Permit revision* means any permit modification or administrative permit amendment to a title V permit as defined in regulations codified in this chapter to implement title V of the Act (42 U.S.C. 7661).

*Permitting authority* means: (1) The State air pollution control agency, local agency, other State agency, or other agency authorized by the Administrator to carry out a permit program under part 70 of this chapter; or

(2) The Administrator, in the case of EPA-implemented permit programs under title V of the Act (42 U.S.C. 7661).

*Potential to emit* means the maximum capacity of a stationary source to emit a pollutant under its physical and operational design. Any physical or operational limitation on the capacity of the stationary source to emit a pollutant, including air pollution control equipment and restrictions on hours of operation or on the type or amount of material combusted, stored, or processed, shall be treated as part of its design if the limitation or the effect it would have on emissions is federally enforceable.

*Reconstruction* means the replacement of components of an affected or a previously unaffected stationary source to such an extent that:

(1) The fixed capital cost of the new components exceeds 50 percent of the fixed capital cost that would be required to construct a comparable new source; and

(2) It is technologically and economically feasible for the reconstructed source to meet the relevant standard(s) established by the Administrator (or a State) pursuant to section 112 of the Act. Upon reconstruction, an affected source, or a stationary source that becomes an affected source, is subject to relevant standards for new sources, including compliance dates, irrespective of any change in emissions of hazardous air pollutants from that source.

*Regulation promulgation schedule* means the schedule for the promulgation of emission standards under this part, established by the Administrator pursuant to section 112(e) of the Act

and published in the FEDERAL REGISTER.

*Relevant standard* means:

- (1) An emission standard;
- (2) An alternative emission standard;
- (3) An alternative emission limitation; or
- (4) An equivalent emission limitation established pursuant to section 112 of the Act that applies to the stationary source, the group of stationary sources, or the portion of a stationary source regulated by such standard or limitation.

A relevant standard may include or consist of a design, equipment, work practice, or operational requirement, or other measure, process, method, system, or technique (including prohibition of emissions) that the Administrator (or a State) establishes for new or existing sources to which such standard or limitation applies. Every relevant standard established pursuant to section 112 of the Act includes subpart A of this part and all applicable appendices of this part or of other parts of this chapter that are referenced in that standard.

*Responsible official* means one of the following:

- (1) For a corporation: A president, secretary, treasurer, or vice president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation, or a duly authorized representative of such person if the representative is responsible for the overall operation of one or more manufacturing, production, or operating facilities and either:
  - (i) The facilities employ more than 250 persons or have gross annual sales or expenditures exceeding \$25 million (in second quarter 1980 dollars); or
  - (ii) The delegation of authority to such representative is approved in advance by the Administrator.
- (2) For a partnership or sole proprietorship: a general partner or the proprietor, respectively.
- (3) For a municipality, State, Federal, or other public agency: either a principal executive officer or ranking elected official. For the purposes of this part, a principal executive officer of a Federal agency includes the chief

executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., a Regional Administrator of the EPA).

(4) For affected sources (as defined in this part) applying for or subject to a title V permit: "responsible official" shall have the same meaning as defined in part 70 or Federal title V regulations in this chapter (42 U.S.C. 7661), whichever is applicable.

*Run* means one of a series of emission or other measurements needed to determine emissions for a representative operating period or cycle as specified in this part.

*Shutdown* means the cessation of operation of an affected source for any purpose.

*Six-minute period* means, with respect to opacity determinations, any one of the 10 equal parts of a 1-hour period.

*Standard conditions* means a temperature of 293 K (68° F) and a pressure of 101.3 kilopascals (29.92 in. Hg).

*Startup* means the setting in operation of an affected source for any purpose.

*State* means all non-Federal authorities, including local agencies, interstate associations, and State-wide programs, that have delegated authority to implement: (1) The provisions of this part and/or (2) the permit program established under part 70 of this chapter. The term State shall have its conventional meaning where clear from the context.

*Stationary source* means any building, structure, facility, or installation which emits or may emit any air pollutant.

*Test method* means the validated procedure for sampling, preparing, and analyzing for an air pollutant specified in a relevant standard as the performance test procedure. The test method may include methods described in an appendix of this chapter, test methods incorporated by reference in this part, or methods validated for an application through procedures in Method 301 of appendix A of this part.

*Title V permit* means any permit issued, renewed, or revised pursuant to Federal or State regulations established to implement title V of the Act (42 U.S.C. 7661). A title V permit issued

by a State permitting authority is called a part 70 permit in this part.

*Visible emission* means the observation of an emission of opacity or optical density above the threshold of vision.

### § 63.3 Units and abbreviations.

Used in this part are abbreviations and symbols of units of measure. These are defined as follows:

(a) *System International (SI) units of measure:*

A = ampere  
 g = gram  
 Hz = hertz  
 J = joule  
 °K = degree Kelvin  
 kg = kilogram  
 l = liter  
 m = meter  
 m<sup>3</sup> = cubic meter  
 mg = milligram = 10<sup>-3</sup> gram  
 ml = milliliter = 10<sup>-3</sup> liter  
 mm = millimeter = 10<sup>-3</sup> meter  
 Mg = megagram = 10<sup>6</sup> gram = metric ton  
 MJ = megajoule  
 mol = mole  
 N = newton  
 ng = nanogram = 10<sup>-9</sup> gram  
 nm = nanometer = 10<sup>-9</sup> meter  
 Pa = pascal  
 s = second  
 V = volt  
 W = watt  
 Ω = ohm  
 µg = microgram = 10<sup>-6</sup> gram  
 µl = microliter = 10<sup>-6</sup> liter

(b) *Other units of measure:*

Btu = British thermal unit  
 °C = degree Celsius (centigrade)  
 cal = calorie  
 cfm = cubic feet per minute  
 cc = cubic centimeter  
 cu ft = cubic feet  
 d = day  
 dcf = dry cubic feet  
 dcm = dry cubic meter  
 dscf = dry cubic feet at standard conditions  
 dscm = dry cubic meter at standard conditions  
 eq = equivalent  
 °F = degree Fahrenheit  
 ft = feet  
 ft<sup>2</sup> = square feet  
 ft<sup>3</sup> = cubic feet  
 gal = gallon

gr = grain  
 g-eq = gram equivalent  
 g-mole = gram mole  
 hr = hour  
 in. = inch  
 in. H<sub>2</sub>O = inches of water  
 K = 1,000  
 kcal = kilocalorie  
 lb = pound  
 lpm = liter per minute  
 meq = milliequivalent  
 min = minute  
 MW = molecular weight  
 oz = ounces  
 ppb = parts per billion  
 ppbw = parts per billion by weight  
 ppbv = parts per billion by volume  
 ppm = parts per million  
 ppmw = parts per million by weight  
 ppmv = parts per million by volume  
 psia = pounds per square inch absolute  
 psig = pounds per square inch gage  
 °R = degree Rankine  
 scf = cubic feet at standard conditions  
 scfh = cubic feet at standard conditions per hour  
 scm = cubic meter at standard conditions  
 sec = second  
 sq ft = square feet  
 std = at standard conditions  
 v/v = volume per volume  
 yd<sup>2</sup> = square yards  
 yr = year

(c) *Miscellaneous:*

act = actual  
 avg = average  
 I.D. = inside diameter  
 M = molar  
 N = normal  
 O.D. = outside diameter  
 % = percent

### § 63.4 Prohibited activities and circumvention.

(a) *Prohibited activities.* (1) No owner or operator subject to the provisions of this part shall operate any affected source in violation of the requirements of this part except under—

(i) An extension of compliance granted by the Administrator under this part; or

(ii) An extension of compliance granted under this part by a State with an approved permit program; or

(iii) An exemption from compliance granted by the President under section 112(i)(4) of the Act.

(2) No owner or operator subject to the provisions of this part shall fail to keep records, notify, report, or revise reports as required under this part.

(3) After the effective date of an approved permit program in a State, no owner or operator of an affected source in that State who is required under this part to obtain a title V permit shall operate such source except in compliance with the provisions of this part and the applicable requirements of the permit program in that State.

(4) [Reserved]

(5) An owner or operator of an affected source who is subject to an emission standard promulgated under this part shall comply with the requirements of that standard by the date(s) established in the applicable subpart(s) of this part (including this subpart) regardless of whether—

(i) A title V permit has been issued to that source; or

(ii) If a title V permit has been issued to that source, whether such permit has been revised or modified to incorporate the emission standard.

(b) *Circumvention.* No owner or operator subject to the provisions of this part shall build, erect, install, or use any article, machine, equipment, or process to conceal an emission that would otherwise constitute noncompliance with a relevant standard. Such concealment includes, but is not limited to—

(1) The use of diluents to achieve compliance with a relevant standard based on the concentration of a pollutant in the effluent discharged to the atmosphere;

(2) The use of gaseous diluents to achieve compliance with a relevant standard for visible emissions; and

(3) The fragmentation of an operation such that the operation avoids regulation by a relevant standard.

(c) *Severability.* Notwithstanding any requirement incorporated into a title V permit obtained by an owner or operator subject to the provisions of this part, the provisions of this part are federally enforceable.

**§ 63.5 Construction and reconstruction.**

(a) *Applicability.* (1) This section implements the preconstruction review

requirements of section 112(i)(1) for sources subject to a relevant emission standard that has been promulgated in this part. In addition, this section includes other requirements for constructed and reconstructed stationary sources that are or become subject to a relevant promulgated emission standard.

(2) After the effective date of a relevant standard promulgated under this part, the requirements in this section apply to owners or operators who construct a new source or reconstruct a source after the proposal date of that standard. New or reconstructed sources that start up before the standard's effective date are not subject to the preconstruction review requirements specified in paragraphs (b)(3), (d), and (e) of this section.

(b) *Requirements for existing, newly constructed, and reconstructed sources.*

(1) Upon construction an affected source is subject to relevant standards for new sources, including compliance dates. Upon reconstruction, an affected source is subject to relevant standards for new sources, including compliance dates, irrespective of any change in emissions of hazardous air pollutants from that source.

(2) [Reserved]

(3) After the effective date of any relevant standard promulgated by the Administrator under this part, whether or not an approved permit program is effective in the State in which an affected source is (or would be) located, no person may construct a new major affected source or reconstruct a major affected source subject to such standard, or reconstruct a major source such that the source becomes a major affected source subject to the standard, without obtaining written approval, in advance, from the Administrator in accordance with the procedures specified in paragraphs (d) and (e) of this section.

(4) After the effective date of any relevant standard promulgated by the Administrator under this part, whether or not an approved permit program is effective in the State in which an affected source is (or would be) located, no person may construct a new affected source or reconstruct an affected

source subject to such standard, or reconstruct a source such that the source becomes an affected source subject to the standard, without notifying the Administrator of the intended construction or reconstruction. The notification shall be submitted in accordance with the procedures in §63.9(b) and shall include all the information required for an application for approval of construction or reconstruction as specified in paragraph (d) of this section. For major sources, the application for approval of construction or reconstruction may be used to fulfill the notification requirements of this paragraph.

(5) After the effective date of any relevant standard promulgated by the Administrator under this part, whether or not an approved permit program is effective in the State in which an affected source is located, no person may operate such source without complying with the provisions of this subpart and the relevant standard unless that person has received an extension of compliance or an exemption from compliance under §63.6(i) or §63.6(j) of this subpart.

(6) After the effective date of any relevant standard promulgated by the Administrator under this part, whether or not an approved permit program is effective in the State in which an affected source is located, equipment added (or a process change) to an affected source that is within the scope of the definition of affected source under the relevant standard shall be considered part of the affected source and subject to all provisions of the relevant standard established for that affected source. If a new affected source is added to the facility, the new affected source shall be subject to all the provisions of the relevant standard that are established for new sources including compliance dates.

(c) [Reserved]

(d) *Application for approval of construction or reconstruction.* The provisions of this paragraph implement section 112(i)(1) of the Act.

(1) *General application requirements.* (i) An owner or operator who is subject to the requirements of paragraph (b)(3) of this section shall submit to the Administrator an application for approval of

the construction of a new major affected source, the reconstruction of a major affected source, or the reconstruction of a major source such that the source becomes a major affected source subject to the standard. The application shall be submitted as soon as practicable before the construction or reconstruction is planned to commence (but no sooner than the effective date of the relevant standard) if the construction or reconstruction commences after the effective date of a relevant standard promulgated in this part. The application shall be submitted as soon as practicable before startup but no later than 60 days after the effective date of a relevant standard promulgated in this part if the construction or reconstruction had commenced and initial startup had not occurred before the standard's effective date. The application for approval of construction or reconstruction may be used to fulfill the initial notification requirements of §63.9(b)(5) of this subpart. The owner or operator may submit the application for approval well in advance of the date construction or reconstruction is planned to commence in order to ensure a timely review by the Administrator and that the planned commencement date will not be delayed.

(ii) A separate application shall be submitted for each construction or reconstruction. Each application for approval of construction or reconstruction shall include at a minimum:

(A) The applicant's name and address;

(B) A notification of intention to construct a new major affected source or make any physical or operational change to a major affected source that may meet or has been determined to meet the criteria for a reconstruction, as defined in §63.2;

(C) The address (i.e., physical location) or proposed address of the source;

(D) An identification of the relevant standard that is the basis of the application;

(E) The expected commencement date of the construction or reconstruction;

(F) The expected completion date of the construction or reconstruction;

(G) The anticipated date of (initial) startup of the source;

(H) The type and quantity of hazardous air pollutants emitted by the source, reported in units and averaging times and in accordance with the test methods specified in the relevant standard, or if actual emissions data are not yet available, an estimate of the type and quantity of hazardous air pollutants expected to be emitted by the source reported in units and averaging times specified in the relevant standard. The owner or operator may submit percent reduction information if a relevant standard is established in terms of percent reduction. However, operating parameters, such as flow rate, shall be included in the submission to the extent that they demonstrate performance and compliance; and

(I) [Reserved]

(J) Other information as specified in paragraphs (d)(2) and (d)(3) of this section.

(iii) An owner or operator who submits estimates or preliminary information in place of the actual emissions data and analysis required in paragraphs (d)(1)(ii)(H) and (d)(2) of this section shall submit the actual, measured emissions data and other correct information as soon as available but no later than with the notification of compliance status required in § 63.9(h) (see § 63.9(h)(5)).

(2) *Application for approval of reconstruction.* Each application for approval of construction shall include, in addition to the information required in paragraph (d)(1)(ii) of this section, technical information describing the proposed nature, size, design, operating design capacity, and method of operation of the source, including an identification of each point of emission for each hazardous air pollutant that is emitted (or could be emitted) and a description of the planned air pollution control system (equipment or method) for each emission point. The description of the equipment to be used for the control of emissions shall include each control device for each hazardous air pollutant and the estimated control efficiency (percent) for each control device. The description of the method to be used for the control of emissions shall include an estimated control efficiency (percent) for that method. Such

technical information shall include calculations of emission estimates in sufficient detail to permit assessment of the validity of the calculations. An owner or operator who submits approximations of control efficiencies under this subparagraph shall submit the actual control efficiencies as specified in paragraph (d)(1)(iii) of this section.

(3) *Application for approval of reconstruction.* Each application for approval of reconstruction shall include, in addition to the information required in paragraph (d)(1)(ii) of this section—

(i) A brief description of the affected source and the components that are to be replaced;

(ii) A description of present and proposed emission control systems (i.e., equipment or methods). The description of the equipment to be used for the control of emissions shall include each control device for each hazardous air pollutant and the estimated control efficiency (percent) for each control device. The description of the method to be used for the control of emissions shall include an estimated control efficiency (percent) for that method. Such technical information shall include calculations of emission estimates in sufficient detail to permit assessment of the validity of the calculations;

(iii) An estimate of the fixed capital cost of the replacements and of constructing a comparable entirely new source;

(iv) The estimated life of the affected source after the replacements; and

(v) A discussion of any economic or technical limitations the source may have in complying with relevant standards or other requirements after the proposed replacements. The discussion shall be sufficiently detailed to demonstrate to the Administrator's satisfaction that the technical or economic limitations affect the source's ability to comply with the relevant standard and how they do so.

(vi) If in the application for approval of reconstruction the owner or operator designates the affected source as a reconstructed source and declares that there are no economic or technical limitations to prevent the source from complying with all relevant standards

or other requirements, the owner or operator need not submit the information required in subparagraphs (d)(3) (iii) through (v) of this section, above.

(4) *Additional information.* The Administrator may request additional relevant information after the submittal of an application for approval of construction or reconstruction.

(e) *Approval of construction or reconstruction.* (1)(i) If the Administrator determines that, if properly constructed, or reconstructed, and operated, a new or existing source for which an application under paragraph (d) of this section was submitted will not cause emissions in violation of the relevant standard(s) and any other federally enforceable requirements, the Administrator will approve the construction or reconstruction.

(ii) In addition, in the case of reconstruction, the Administrator's determination under this paragraph will be based on:

(A) The fixed capital cost of the replacements in comparison to the fixed capital cost that would be required to construct a comparable entirely new source;

(B) The estimated life of the source after the replacements compared to the life of a comparable entirely new source;

(C) The extent to which the components being replaced cause or contribute to the emissions from the source; and

(D) Any economic or technical limitations on compliance with relevant standards that are inherent in the proposed replacements.

(2)(i) The Administrator will notify the owner or operator in writing of approval or intention to deny approval of construction or reconstruction within 60 calendar days after receipt of sufficient information to evaluate an application submitted under paragraph (d) of this section. The 60-day approval or denial period will begin after the owner or operator has been notified in writing that his/her application is complete. The Administrator will notify the owner or operator in writing of the status of his/her application, that is, whether the application contains sufficient information to make a determination, within 30 calendar days after

receipt of the original application and within 30 calendar days after receipt of any supplementary information that is submitted.

(ii) When notifying the owner or operator that his/her application is not complete, the Administrator will specify the information needed to complete the application and provide notice of opportunity for the applicant to present, in writing, within 30 calendar days after he/she is notified of the incomplete application, additional information or arguments to the Administrator to enable further action on the application.

(3) Before denying any application for approval of construction or reconstruction, the Administrator will notify the applicant of the Administrator's intention to issue the denial together with—

(i) Notice of the information and findings on which the intended denial is based; and

(ii) Notice of opportunity for the applicant to present, in writing, within 30 calendar days after he/she is notified of the intended denial, additional information or arguments to the Administrator to enable further action on the application.

(4) A final determination to deny any application for approval will be in writing and will specify the grounds on which the denial is based. The final determination will be made within 60 calendar days of presentation of additional information or arguments (if the application is complete), or within 60 calendar days after the final date specified for presentation if no presentation is made.

(5) Neither the submission of an application for approval nor the Administrator's approval of construction or reconstruction shall—

(i) Relieve an owner or operator of legal responsibility for compliance with any applicable provisions of this part or with any other applicable Federal, State, or local requirement; or

(ii) Prevent the Administrator from implementing or enforcing this part or taking any other action under the Act.

(f) *Approval of construction or reconstruction based on prior State preconstruction review.* (1) The Administrator may approve an application for

construction or reconstruction specified in paragraphs (b)(3) and (d) of this section if the owner or operator of a new or reconstructed source who is subject to such requirement demonstrates to the Administrator's satisfaction that the following conditions have been (or will be) met:

(i) The owner or operator of the new or reconstructed source has undergone a preconstruction review and approval process in the State in which the source is (or would be) located before the promulgation date of the relevant standard and has received a federally enforceable construction permit that contains a finding that the source will meet the relevant emission standard as proposed, if the source is properly built and operated;

(ii) In making its finding, the State has considered factors substantially equivalent to those specified in paragraph (e)(1) of this section; and either

(iii) The promulgated standard is no more stringent than the proposed standard in any relevant aspect that would affect the Administrator's decision to approve or disapprove an application for approval of construction or reconstruction under this section; or

(iv) The promulgated standard is more stringent than the proposed standard but the owner or operator will comply with the standard as proposed during the 3-year period immediately following the effective date of the standard as allowed for in § 63.6(b)(3) of this subpart.

(2) The owner or operator shall submit to the Administrator the request for approval of construction or reconstruction under this paragraph no later than the application deadline specified in paragraph (d)(1) of this section (see also § 63.9(b)(2) of this subpart). The owner or operator shall include in the request information sufficient for the Administrator's determination. The Administrator will evaluate the owner or operator's request in accordance with the procedures specified in paragraph (e) of this section. The Administrator may request additional relevant information after the submittal of a request for approval of construction or reconstruction under this paragraph.

**§ 63.6 Compliance with standards and maintenance requirements.**

(a) *Applicability.* (1) The requirements in this section apply to owners or operators of affected sources for which any relevant standard has been established pursuant to section 112 of the Act unless—

(i) The Administrator (or a State with an approved permit program) has granted an extension of compliance consistent with paragraph (i) of this section; or

(ii) The President has granted an exemption from compliance with any relevant standard in accordance with section 112(i)(4) of the Act.

(2) If an area source that otherwise would be subject to an emission standard or other requirement established under this part if it were a major source subsequently increases its emissions of hazardous air pollutants (or its potential to emit hazardous air pollutants) such that the source is a major source, such source shall be subject to the relevant emission standard or other requirement.

(b) *Compliance dates for new and reconstructed sources.* (1) Except as specified in paragraphs (b)(3) and (b)(4) of this section, the owner or operator of a new or reconstructed source that has an initial startup before the effective date of a relevant standard established under this part pursuant to section 112(d), 112(f), or 112(h) of the Act shall comply with such standard not later than the standard's effective date.

(2) Except as specified in paragraphs (b)(3) and (b)(4) of this section, the owner or operator of a new or reconstructed source that has an initial startup after the effective date of a relevant standard established under this part pursuant to section 112(d), 112(f), or 112(h) of the Act shall comply with such standard upon startup of the source.

(3) The owner or operator of an affected source for which construction or reconstruction is commenced after the proposal date of a relevant standard established under this part pursuant to section 112(d), 112(f), or 112(h) of the Act but before the effective date (that is, promulgation) of such standard

shall comply with the relevant emission standard not later than the date 3 years after the effective date if:

(i) The promulgated standard (that is, the relevant standard) is more stringent than the proposed standard; and

(ii) The owner or operator complies with the standard as proposed during the 3-year period immediately after the effective date.

(4) The owner or operator of an affected source for which construction or reconstruction is commenced after the proposal date of a relevant standard established pursuant to section 112(d) of the Act but before the proposal date of a relevant standard established pursuant to section 112(f) shall comply with the emission standard under section 112(f) not later than the date 10 years after the date construction or reconstruction is commenced, except that, if the section 112(f) standard is promulgated more than 10 years after construction or reconstruction is commenced, the owner or operator shall comply with the standard as provided in paragraphs (b)(1) and (b)(2) of this section.

(5) The owner or operator of a new source that is subject to the compliance requirements of paragraph (b)(3) or paragraph (b)(4) of this section shall notify the Administrator in accordance with § 63.9(d) of this subpart.

(6) [Reserved]

(7) After the effective date of an emission standard promulgated under this part, the owner or operator of an unaffected new area source (i.e., an area source for which construction or reconstruction was commenced after the proposal date of the standard) that increases its emissions of (or its potential to emit) hazardous air pollutants such that the source becomes a major source that is subject to the emission standard, shall comply with the relevant emission standard immediately upon becoming a major source. This compliance date shall apply to new area sources that become affected major sources regardless of whether the new area source previously was affected by that standard. The new affected major source shall comply with all requirements of that standard that affect new sources.

(c) *Compliance dates for existing sources.* (1) After the effective date of a relevant standard established under this part pursuant to section 112(d) or 112(h) of the Act, the owner or operator of an existing source shall comply with such standard by the compliance date established by the Administrator in the applicable subpart(s) of this part. Except as otherwise provided for in section 112 of the Act, in no case will the compliance date established for an existing source in an applicable subpart of this part exceed 3 years after the effective date of such standard.

(2) After the effective date of a relevant standard established under this part pursuant to section 112(f) of the Act, the owner or operator of an existing source shall comply with such standard not later than 90 days after the standard's effective date unless the Administrator has granted an extension to the source under paragraph (i)(4)(ii) of this section.

(3)-(4) [Reserved]

(5) After the effective date of an emission standard promulgated under this part, the owner or operator of an unaffected existing area source that increases its emissions of (or its potential to emit) hazardous air pollutants such that the source becomes a major source that is subject to the emission standard shall comply by the date specified in the standard for existing area sources that become major sources. If no such compliance date is specified in the standard, the source shall have a period of time to comply with the relevant emission standard that is equivalent to the compliance period specified in that standard for other existing sources. This compliance period shall apply to existing area sources that become affected major sources regardless of whether the existing area source previously was affected by that standard. Notwithstanding the previous two sentences, however, if the existing area source becomes a major source by the addition of a new affected source or by reconstructing, the portion of the existing facility that is a new affected source or a reconstructed source shall comply with all requirements of that standard that affect new sources, including the compliance date for new sources.

(d) [Reserved]

(e) *Operation and maintenance requirements.* (1)(i) At all times, including periods of startup, shutdown, and malfunction, owners or operators shall operate and maintain any affected source, including associated air pollution control equipment, in a manner consistent with good air pollution control practices for minimizing emissions at least to the levels required by all relevant standards.

(ii) Malfunctions shall be corrected as soon as practicable after their occurrence in accordance with the startup, shutdown, and malfunction plan required in paragraph (e)(3) of this section.

(iii) Operation and maintenance requirements established pursuant to section 112 of the Act are enforceable independent of emissions limitations or other requirements in relevant standards.

(2) Determination of whether acceptable operation and maintenance procedures are being used will be based on information available to the Administrator which may include, but is not limited to, monitoring results, review of operation and maintenance procedures (including the startup, shutdown, and malfunction plan required in paragraph (e)(3) of this section), review of operation and maintenance records, and inspection of the source.

(3) *Startup, shutdown, and malfunction plan.* (i) The owner or operator of an affected source shall develop and implement a written startup, shutdown, and malfunction plan that describes, in detail, procedures for operating and maintaining the source during periods of startup, shutdown, and malfunction and a program of corrective action for malfunctioning process and air pollution control equipment used to comply with the relevant standard. As required under § 63.8(c)(1)(i), the plan shall identify all routine or otherwise predictable CMS malfunctions. This plan shall be developed by the owner or operator by the source's compliance date for that relevant standard. The plan shall be incorporated by reference into the source's title V permit. The purpose of the startup, shutdown, and malfunction plan is to—

(A) Ensure that, at all times, owners or operators operate and maintain affected sources, including associated air pollution control equipment, in a manner consistent with good air pollution control practices for minimizing emissions at least to the levels required by all relevant standards;

(B) Ensure that owners or operators are prepared to correct malfunctions as soon as practicable after their occurrence in order to minimize excess emissions of hazardous air pollutants; and

(C) Reduce the reporting burden associated with periods of startup, shutdown, and malfunction (including corrective action taken to restore malfunctioning process and air pollution control equipment to its normal or usual manner of operation).

(ii) During periods of startup, shutdown, and malfunction, the owner or operator of an affected source shall operate and maintain such source (including associated air pollution control equipment) in accordance with the procedures specified in the startup, shutdown, and malfunction plan developed under paragraph (e)(3)(i) of this section.

(iii) When actions taken by the owner or operator during a startup, shutdown, or malfunction (including actions taken to correct a malfunction) are consistent with the procedures specified in the affected source's startup, shutdown, and malfunction plan, the owner or operator shall keep records for that event that demonstrate that the procedures specified in the plan were followed. These records may take the form of a "checklist," or other effective form of recordkeeping, that confirms conformance with the startup, shutdown, and malfunction plan for that event. In addition, the owner or operator shall keep records of these events as specified in § 63.10(b) (and elsewhere in this part), including records of the occurrence and duration of each startup, shutdown, or malfunction of operation and each malfunction of the air pollution control equipment. Furthermore, the owner or operator shall confirm that actions taken during the relevant reporting period during periods of startup, shutdown, and malfunction were consistent with the affected source's startup, shutdown and

malfunction plan in the semiannual (or more frequent) startup, shutdown, and malfunction report required in § 63.10(d)(5).

(iv) If an action taken by the owner or operator during a startup, shutdown, or malfunction (including an action taken to correct a malfunction) is not consistent with the procedures specified in the affected source's startup, shutdown, and malfunction plan, the owner or operator shall record the actions taken for that event and shall report such actions within 2 working days after commencing actions inconsistent with the plan, followed by a letter within 7 working days after the end of the event, in accordance with § 63.10(d)(5) (unless the owner or operator makes alternative reporting arrangements, in advance, with the Administrator (see § 63.10(d)(5)(ii))).

(v) The owner or operator shall keep the written startup, shutdown, and malfunction plan on record after it is developed to be made available for inspection, upon request, by the Administrator for the life of the affected source or until the affected source is no longer subject to the provisions of this part. In addition, if the startup, shutdown, and malfunction plan is revised, the owner or operator shall keep previous (i.e., superseded) versions of the startup, shutdown, and malfunction plan on record, to be made available for inspection, upon request, by the Administrator, for a period of 5 years after each revision to the plan.

(vi) To satisfy the requirements of this section to develop a startup, shutdown, and malfunction plan, the owner or operator may use the affected source's standard operating procedures (SOP) manual, or an Occupational Safety and Health Administration (OSHA) or other plan, provided the alternative plans meet all the requirements of this section and are made available for inspection when requested by the Administrator.

(vii) Based on the results of a determination made under paragraph (e)(2) of this section, the Administrator may require that an owner or operator of an affected source make changes to the startup, shutdown, and malfunction plan for that source. The Administrator may require reasonable revisions

to a startup, shutdown, and malfunction plan, if the Administrator finds that the plan:

(A) Does not address a startup, shutdown, or malfunction event that has occurred;

(B) Fails to provide for the operation of the source (including associated air pollution control equipment) during a startup, shutdown, or malfunction event in a manner consistent with good air pollution control practices for minimizing emissions at least to the levels required by all relevant standards; or

(C) Does not provide adequate procedures for correcting malfunctioning process and/or air pollution control equipment as quickly as practicable.

(viii) If the startup, shutdown, and malfunction plan fails to address or inadequately addresses an event that meets the characteristics of a malfunction but was not included in the startup, shutdown, and malfunction plan at the time the owner or operator developed the plan, the owner or operator shall revise the startup, shutdown, and malfunction plan within 45 days after the event to include detailed procedures for operating and maintaining the source during similar malfunction events and a program of corrective action for similar malfunctions of process or air pollution control equipment.

(f) *Compliance with nonopacity emission standards*—(1) *Applicability*. The nonopacity emission standards set forth in this part shall apply at all times except during periods of startup, shutdown, and malfunction, and as otherwise specified in an applicable subpart.

(2) *Methods for determining compliance*.

(i) The Administrator will determine compliance with nonopacity emission standards in this part based on the results of performance tests conducted according to the procedures in § 63.7, unless otherwise specified in an applicable subpart of this part.

(ii) The Administrator will determine compliance with nonopacity emission standards in this part by evaluation of an owner or operator's conformance with operation and maintenance requirements, including the evaluation of monitoring data, as specified in § 63.6(e) and applicable subparts of this part.

(iii) If an affected source conducts performance testing at startup to obtain an operating permit in the State in which the source is located, the results of such testing may be used to demonstrate compliance with a relevant standard if—

(A) The performance test was conducted within a reasonable amount of time before an initial performance test is required to be conducted under the relevant standard;

(B) The performance test was conducted under representative operating conditions for the source;

(C) The performance test was conducted and the resulting data were reduced using EPA-approved test methods and procedures, as specified in §63.7(e) of this subpart; and

(D) The performance test was appropriately quality-assured, as specified in §63.7(c) of this subpart.

(iv) The Administrator will determine compliance with design, equipment, work practice, or operational emission standards in this part by review of records, inspection of the source, and other procedures specified in applicable subparts of this part.

(v) The Administrator will determine compliance with design, equipment, work practice, or operational emission standards in this part by evaluation of an owner or operator's conformance with operation and maintenance requirements, as specified in paragraph (e) of this section and applicable subparts of this part.

(3) *Finding of compliance.* The Administrator will make a finding concerning an affected source's compliance with a nonopacity emission standard, as specified in paragraphs (f)(1) and (f)(2) of this section, upon obtaining all the compliance information required by the relevant standard (including the written reports of performance test results, monitoring results, and other information, if applicable) and any information available to the Administrator needed to determine whether proper operation and maintenance practices are being used.

(g) *Use of an alternative nonopacity emission standard.* (1) If, in the Administrator's judgment, an owner or operator of an affected source has established that an alternative means of

emission limitation will achieve a reduction in emissions of a hazardous air pollutant from an affected source at least equivalent to the reduction in emissions of that pollutant from that source achieved under any design, equipment, work practice, or operational emission standard, or combination thereof, established under this part pursuant to section 112(h) of the Act, the Administrator will publish in the FEDERAL REGISTER a notice permitting the use of the alternative emission standard for purposes of compliance with the promulgated standard. Any FEDERAL REGISTER notice under this paragraph shall be published only after the public is notified and given the opportunity to comment. Such notice will restrict the permission to the stationary source(s) or category(ies) of sources from which the alternative emission standard will achieve equivalent emission reductions. The Administrator will condition permission in such notice on requirements to assure the proper operation and maintenance of equipment and practices required for compliance with the alternative emission standard and other requirements, including appropriate quality assurance and quality control requirements, that are deemed necessary.

(2) An owner or operator requesting permission under this paragraph shall, unless otherwise specified in an applicable subpart, submit a proposed test plan or the results of testing and monitoring in accordance with §63.7 and §63.8, a description of the procedures followed in testing or monitoring, and a description of pertinent conditions during testing or monitoring. Any testing or monitoring conducted to request permission to use an alternative nonopacity emission standard shall be appropriately quality assured and quality controlled, as specified in §63.7 and §63.8.

(3) The Administrator may establish general procedures in an applicable subpart that accomplish the requirements of paragraphs (g)(1) and (g)(2) of this section.

(h) *Compliance with opacity and visible emission standards—(1) Applicability.* The opacity and visible emission standards set forth in this part shall apply at all times except during periods of startup,

shutdown, and malfunction, and as otherwise specified in an applicable subpart.

(2) *Methods for determining compliance.*

(i) The Administrator will determine compliance with opacity and visible emission standards in this part based on the results of the test method specified in an applicable subpart. Whenever a continuous opacity monitoring system (COMS) is required to be installed to determine compliance with numerical opacity emission standards in this part, compliance with opacity emission standards in this part shall be determined by using the results from the COMS. Whenever an opacity emission test method is not specified, compliance with opacity emission standards in this part shall be determined by conducting observations in accordance with Test Method 9 in appendix A of part 60 of this chapter or the method specified in paragraph (h)(7)(ii) of this section. Whenever a visible emission test method is not specified, compliance with visible emission standards in this part shall be determined by conducting observations in accordance with Test Method 22 in appendix A of part 60 of this chapter.

(ii) [Reserved]

(iii) If an affected source undergoes opacity or visible emission testing at startup to obtain an operating permit in the State in which the source is located, the results of such testing may be used to demonstrate compliance with a relevant standard if—

(A) The opacity or visible emission test was conducted within a reasonable amount of time before a performance test is required to be conducted under the relevant standard;

(B) The opacity or visible emission test was conducted under representative operating conditions for the source;

(C) The opacity or visible emission test was conducted and the resulting data were reduced using EPA-approved test methods and procedures, as specified in § 63.7(e) of this subpart; and

(D) The opacity or visible emission test was appropriately quality-assured, as specified in § 63.7(c) of this section.

(3) [Reserved]

(4) *Notification of opacity or visible emission observations.* The owner or op-

erator of an affected source shall notify the Administrator in writing of the anticipated date for conducting opacity or visible emission observations in accordance with § 63.9(f), if such observations are required for the source by a relevant standard.

(5) *Conduct of opacity or visible emission observations.* When a relevant standard under this part includes an opacity or visible emission standard, the owner or operator of an affected source shall comply with the following:

(i) For the purpose of demonstrating initial compliance, opacity or visible emission observations shall be conducted concurrently with the initial performance test required in § 63.7 unless one of the following conditions applies:

(A) If no performance test under § 63.7 is required, opacity or visible emission observations shall be conducted within 60 days after achieving the maximum production rate at which a new or reconstructed source will be operated, but not later than 120 days after initial startup of the source, or within 120 days after the effective date of the relevant standard in the case of new sources that start up before the standard's effective date. If no performance test under § 63.7 is required, opacity or visible emission observations shall be conducted within 120 days after the compliance date for an existing or modified source; or

(B) If visibility or other conditions prevent the opacity or visible emission observations from being conducted concurrently with the initial performance test required under § 63.7, or within the time period specified in paragraph (h)(5)(i)(A) of this section, the source's owner or operator shall reschedule the opacity or visible emission observations as soon after the initial performance test, or time period, as possible, but not later than 30 days thereafter, and shall advise the Administrator of the rescheduled date. The rescheduled opacity or visible emission observations shall be conducted (to the extent possible) under the same operating conditions that existed during the initial performance test conducted under § 63.7. The visible emissions observer shall determine whether visibility or other conditions prevent the

opacity or visible emission observations from being made concurrently with the initial performance test in accordance with procedures contained in Test Method 9 or Test Method 22 in appendix A of part 60 of this chapter.

(ii) For the purpose of demonstrating initial compliance, the minimum total time of opacity observations shall be 3 hours (30 6-minute averages) for the performance test or other required set of observations (e.g., for fugitive-type emission sources subject only to an opacity emission standard).

(iii) The owner or operator of an affected source to which an opacity or visible emission standard in this part applies shall conduct opacity or visible emission observations in accordance with the provisions of this section, record the results of the evaluation of emissions, and report to the Administrator the opacity or visible emission results in accordance with the provisions of § 63.10(d).

(iv) [Reserved]

(v) Opacity readings of portions of plumes that contain condensed, uncombined water vapor shall not be used for purposes of determining compliance with opacity emission standards.

(6) *Availability of records.* The owner or operator of an affected source shall make available, upon request by the Administrator, such records that the Administrator deems necessary to determine the conditions under which the visual observations were made and shall provide evidence indicating proof of current visible observer emission certification.

(7) *Use of a continuous opacity monitoring system.* (i) The owner or operator of an affected source required to use a continuous opacity monitoring system (COMS) shall record the monitoring data produced during a performance test required under § 63.7 and shall furnish the Administrator a written report of the monitoring results in accordance with the provisions of § 63.10(e)(4).

(ii) Whenever an opacity emission test method has not been specified in an applicable subpart, or an owner or operator of an affected source is required to conduct Test Method 9 observations (see appendix A of part 60 of

this chapter), the owner or operator may submit, for compliance purposes, COMS data results produced during any performance test required under § 63.7 in lieu of Method 9 data. If the owner or operator elects to submit COMS data for compliance with the opacity emission standard, he or she shall notify the Administrator of that decision, in writing, simultaneously with the notification under § 63.7(b) of the date the performance test is scheduled to begin. Once the owner or operator of an affected source has notified the Administrator to that effect, the COMS data results will be used to determine opacity compliance during subsequent performance tests required under § 63.7, unless the owner or operator notifies the Administrator in writing to the contrary not later than with the notification under § 63.7(b) of the date the subsequent performance test is scheduled to begin.

(iii) For the purposes of determining compliance with the opacity emission standard during a performance test required under § 63.7 using COMS data, the COMS data shall be reduced to 6-minute averages over the duration of the mass emission performance test.

(iv) The owner or operator of an affected source using a COMS for compliance purposes is responsible for demonstrating that he/she has complied with the performance evaluation requirements of § 63.8(e), that the COMS has been properly maintained, operated, and data quality-assured, as specified in § 63.8(c) and § 63.8(d), and that the resulting data have not been altered in any way.

(v) Except as provided in paragraph (h)(7)(ii) of this section, the results of continuous monitoring by a COMS that indicate that the opacity at the time visual observations were made was not in excess of the emission standard are probative but not conclusive evidence of the actual opacity of an emission, provided that the affected source proves that, at the time of the alleged violation, the instrument used was properly maintained, as specified in § 63.8(c), and met Performance Specification 1 in appendix B of part 60 of this chapter, and that the resulting data have not been altered in any way.

(8) *Finding of compliance.* The Administrator will make a finding concerning an affected source's compliance with an opacity or visible emission standard upon obtaining all the compliance information required by the relevant standard (including the written reports of the results of the performance tests required by § 63.7, the results of Test Method 9 or another required opacity or visible emission test method, the observer certification required by paragraph (h)(6) of this section, and the continuous opacity monitoring system results, whichever is/are applicable) and any information available to the Administrator needed to determine whether proper operation and maintenance practices are being used.

(9) *Adjustment to an opacity emission standard.* (i) If the Administrator finds under paragraph (h)(8) of this section that an affected source is in compliance with all relevant standards for which initial performance tests were conducted under § 63.7, but during the time such performance tests were conducted fails to meet any relevant opacity emission standard, the owner or operator of such source may petition the Administrator to make appropriate adjustment to the opacity emission standard for the affected source. Until the Administrator notifies the owner or operator of the appropriate adjustment, the relevant opacity emission standard remains applicable.

(ii) The Administrator may grant such a petition upon a demonstration by the owner or operator that—

(A) The affected source and its associated air pollution control equipment were operated and maintained in a manner to minimize the opacity of emissions during the performance tests;

(B) The performance tests were performed under the conditions established by the Administrator; and

(C) The affected source and its associated air pollution control equipment were incapable of being adjusted or operated to meet the relevant opacity emission standard.

(iii) The Administrator will establish an adjusted opacity emission standard for the affected source meeting the above requirements at a level at which the source will be able, as indicated by

the performance and opacity tests, to meet the opacity emission standard at all times during which the source is meeting the mass or concentration emission standard. The Administrator will promulgate the new opacity emission standard in the FEDERAL REGISTER.

(iv) After the Administrator promulgates an adjusted opacity emission standard for an affected source, the owner or operator of such source shall be subject to the new opacity emission standard, and the new opacity emission standard shall apply to such source during any subsequent performance tests.

(i) *Extension of compliance with emission standards.* (1) Until an extension of compliance has been granted by the Administrator (or a State with an approved permit program) under this paragraph, the owner or operator of an affected source subject to the requirements of this section shall comply with all applicable requirements of this part.

(2) *Extension of compliance for early reductions and other reductions—*(i) *Early reductions.* Pursuant to section 112(i)(5) of the Act, if the owner or operator of an existing source demonstrates that the source has achieved a reduction in emissions of hazardous air pollutants in accordance with the provisions of subpart D of this part, the Administrator (or the State with an approved permit program) will grant the owner or operator an extension of compliance with specific requirements of this part, as specified in subpart D.

(ii) *Other reductions.* Pursuant to section 112(i)(6) of the Act, if the owner or operator of an existing source has installed best available control technology (BACT) (as defined in section 169(3) of the Act) or technology required to meet a lowest achievable emission rate (LAER) (as defined in section 171 of the Act) prior to the promulgation of an emission standard in this part applicable to such source and the same pollutant (or stream of pollutants) controlled pursuant to the BACT or LAER installation, the Administrator will grant the owner or operator an extension of compliance with such emission standard that will apply until the date 5 years after the date on

which such installation was achieved, as determined by the Administrator.

(3) *Request for extension of compliance.* Paragraphs (i)(4) through (i)(7) of this section concern requests for an extension of compliance with a relevant standard under this part (except requests for an extension of compliance under paragraph (i)(2)(i) of this section will be handled through procedures specified in subpart D of this part).

(4)(i)(A) The owner or operator of an existing source who is unable to comply with a relevant standard established under this part pursuant to section 112(d) of the Act may request that the Administrator (or a State, when the State has an approved part 70 permit program and the source is required to obtain a part 70 permit under that program, or a State, when the State has been delegated the authority to implement and enforce the emission standard for that source) grant an extension allowing the source up to 1 additional year to comply with the standard, if such additional period is necessary for the installation of controls. An additional extension of up to 3 years may be added for mining waste operations, if the 1-year extension of compliance is insufficient to dry and cover mining waste in order to reduce emissions of any hazardous air pollutant. The owner or operator of an affected source who has requested an extension of compliance under this paragraph and who is otherwise required to obtain a title V permit shall apply for such permit or apply to have the source's title V permit revised to incorporate the conditions of the extension of compliance. The conditions of an extension of compliance granted under this paragraph will be incorporated into the affected source's title V permit according to the provisions of part 70 or Federal title V regulations in this chapter (42 U.S.C. 7661), whichever are applicable.

(B) Any request under this paragraph for an extension of compliance with a relevant standard shall be submitted in writing to the appropriate authority not later than 12 months before the affected source's compliance date (as specified in paragraphs (b) and (c) of this section) for sources that are not including emission points in an emis-

sions average, or not later than 18 months before the affected source's compliance date (as specified in paragraphs (b) and (c) of this section) for sources that are including emission points in an emissions average. Emission standards established under this part may specify alternative dates for the submittal of requests for an extension of compliance if alternatives are appropriate for the source categories affected by those standards, e.g., a compliance date specified by the standard is less than 12 (or 18) months after the standard's effective date.

(ii) The owner or operator of an existing source unable to comply with a relevant standard established under this part pursuant to section 112(f) of the Act may request that the Administrator grant an extension allowing the source up to 2 years after the standard's effective date to comply with the standard. The Administrator may grant such an extension if he/she finds that such additional period is necessary for the installation of controls and that steps will be taken during the period of the extension to assure that the health of persons will be protected from imminent endangerment. Any request for an extension of compliance with a relevant standard under this paragraph shall be submitted in writing to the Administrator not later than 15 calendar days after the effective date of the relevant standard.

(5) The owner or operator of an existing source that has installed BACT or technology required to meet LAER [as specified in paragraph (i)(2)(ii) of this section] prior to the promulgation of a relevant emission standard in this part may request that the Administrator grant an extension allowing the source 5 years from the date on which such installation was achieved, as determined by the Administrator, to comply with the standard. Any request for an extension of compliance with a relevant standard under this paragraph shall be submitted in writing to the Administrator not later than 120 days after the promulgation date of the standard. The Administrator may grant such an extension if he or she finds that the installation of BACT or technology to meet LAER controls the same pollutant (or stream of pollutants) that

would be controlled at that source by the relevant emission standard.

(6)(i) The request for a compliance extension under paragraph (i)(4) of this section shall include the following information:

(A) A description of the controls to be installed to comply with the standard;

(B) A compliance schedule, including the date by which each step toward compliance will be reached. At a minimum, the list of dates shall include:

(1) The date by which contracts for emission control systems or process changes for emission control will be awarded, or the date by which orders will be issued for the purchase of component parts to accomplish emission control or process changes;

(2) The date by which on-site construction, installation of emission control equipment, or a process change is to be initiated;

(3) The date by which on-site construction, installation of emission control equipment, or a process change is to be completed; and

(4) The date by which final compliance is to be achieved;

(C) A description of interim emission control steps that will be taken during the extension period, including milestones to assure proper operation and maintenance of emission control and process equipment; and

(D) Whether the owner or operator is also requesting an extension of other applicable requirements (e.g., performance testing requirements).

(ii) The request for a compliance extension under paragraph (i)(5) of this section shall include all information needed to demonstrate to the Administrator's satisfaction that the installation of BACT or technology to meet LAER controls the same pollutant (or stream of pollutants) that would be controlled at that source by the relevant emission standard.

(7) Advice on requesting an extension of compliance may be obtained from the Administrator (or the State with an approved permit program).

(8) *Approval of request for extension of compliance.* Paragraphs (i)(9) through (i)(14) of this section concern approval of an extension of compliance re-

quested under paragraphs (i)(4) through (i)(6) of this section.

(9) Based on the information provided in any request made under paragraphs (i)(4) through (i)(6) of this section, or other information, the Administrator (or the State with an approved permit program) may grant an extension of compliance with an emission standard, as specified in paragraphs (i)(4) and (i)(5) of this section.

(10) The extension will be in writing and will—

(i) Identify each affected source covered by the extension;

(ii) Specify the termination date of the extension;

(iii) Specify the dates by which steps toward compliance are to be taken, if appropriate;

(iv) Specify other applicable requirements to which the compliance extension applies (e.g., performance tests); and

(v)(A) Under paragraph (i)(4), specify any additional conditions that the Administrator (or the State) deems necessary to assure installation of the necessary controls and protection of the health of persons during the extension period; or

(B) Under paragraph (i)(5), specify any additional conditions that the Administrator deems necessary to assure the proper operation and maintenance of the installed controls during the extension period.

(11) The owner or operator of an existing source that has been granted an extension of compliance under paragraph (i)(10) of this section may be required to submit to the Administrator (or the State with an approved permit program) progress reports indicating whether the steps toward compliance outlined in the compliance schedule have been reached. The contents of the progress reports and the dates by which they shall be submitted will be specified in the written extension of compliance granted under paragraph (i)(10) of this section.

(12)(i) The Administrator (or the State with an approved permit program) will notify the owner or operator in writing of approval or intention to deny approval of a request for an extension of compliance within 30 calendar days after receipt of sufficient

information to evaluate a request submitted under paragraph (i)(4)(i) or (i)(5) of this section. The 30-day approval or denial period will begin after the owner or operator has been notified in writing that his/her application is complete. The Administrator (or the State) will notify the owner or operator in writing of the status of his/her application, that is, whether the application contains sufficient information to make a determination, within 30 calendar days after receipt of the original application and within 30 calendar days after receipt of any supplementary information that is submitted.

(ii) When notifying the owner or operator that his/her application is not complete, the Administrator will specify the information needed to complete the application and provide notice of opportunity for the applicant to present, in writing, within 30 calendar days after he/she is notified of the incomplete application, additional information or arguments to the Administrator to enable further action on the application.

(iii) Before denying any request for an extension of compliance, the Administrator (or the State with an approved permit program) will notify the owner or operator in writing of the Administrator's (or the State's) intention to issue the denial, together with—

(A) Notice of the information and findings on which the intended denial is based; and

(B) Notice of opportunity for the owner or operator to present in writing, within 15 calendar days after he/she is notified of the intended denial, additional information or arguments to the Administrator (or the State) before further action on the request.

(iv) The Administrator's final determination to deny any request for an extension will be in writing and will set forth the specific grounds on which the denial is based. The final determination will be made within 30 calendar days after presentation of additional information or argument (if the application is complete), or within 30 calendar days after the final date specified for the presentation if no presentation is made.

(13)(i) The Administrator will notify the owner or operator in writing of ap-

proval or intention to deny approval of a request for an extension of compliance within 30 calendar days after receipt of sufficient information to evaluate a request submitted under paragraph (i)(4)(ii) of this section. The 30-day approval or denial period will begin after the owner or operator has been notified in writing that his/her application is complete. The Administrator (or the State) will notify the owner or operator in writing of the status of his/her application, that is, whether the application contains sufficient information to make a determination, within 15 calendar days after receipt of the original application and within 15 calendar days after receipt of any supplementary information that is submitted.

(ii) When notifying the owner or operator that his/her application is not complete, the Administrator will specify the information needed to complete the application and provide notice of opportunity for the applicant to present, in writing, within 15 calendar days after he/she is notified of the incomplete application, additional information or arguments to the Administrator to enable further action on the application.

(iii) Before denying any request for an extension of compliance, the Administrator will notify the owner or operator in writing of the Administrator's intention to issue the denial, together with—

(A) Notice of the information and findings on which the intended denial is based; and

(B) Notice of opportunity for the owner or operator to present in writing, within 15 calendar days after he/she is notified of the intended denial, additional information or arguments to the Administrator before further action on the request.

(iv) A final determination to deny any request for an extension will be in writing and will set forth the specific grounds on which the denial is based. The final determination will be made within 30 calendar days after presentation of additional information or argument (if the application is complete), or within 30 calendar days after the final date specified for the presentation if no presentation is made.

(14) The Administrator (or the State with an approved permit program) may terminate an extension of compliance at an earlier date than specified if any specification under paragraphs (i)(10)(iii) or (i)(10)(iv) of this section is not met.

(15) [Reserved]

(16) The granting of an extension under this section shall not abrogate the Administrator's authority under section 114 of the Act.

(j) *Exemption from compliance with emission standards.* The President may exempt any stationary source from compliance with any relevant standard established pursuant to section 112 of the Act for a period of not more than 2 years if the President determines that the technology to implement such standard is not available and that it is in the national security interests of the United States to do so. An exemption under this paragraph may be extended for 1 or more additional periods, each period not to exceed 2 years.

**§ 63.7 Performance testing requirements.**

(a) *Applicability and performance test dates.* (1) Unless otherwise specified, this section applies to the owner or operator of an affected source required to do performance testing, or another form of compliance demonstration, under a relevant standard.

(2) If required to do performance testing by a relevant standard, and unless a waiver of performance testing is obtained under this section or the conditions of paragraph (c)(3)(ii)(B) of this section apply, the owner or operator of the affected source shall perform such tests as follows—

(i) Within 180 days after the effective date of a relevant standard for a new source that has an initial startup date before the effective date; or

(ii) Within 180 days after initial startup for a new source that has an initial startup date after the effective date of a relevant standard; or

(iii) Within 180 days after the compliance date specified in an applicable subpart of this part for an existing source subject to an emission standard established pursuant to section 112(d) of the Act, or within 180 days after startup of an existing source if the

source begins operation after the effective date of the relevant emission standard; or

(iv) Within 180 days after the compliance date for an existing source subject to an emission standard established pursuant to section 112(f) of the Act; or

(v) Within 180 days after the termination date of the source's extension of compliance for an existing source that obtains an extension of compliance under § 63.6(i); or

(vi) Within 180 days after the compliance date for a new source, subject to an emission standard established pursuant to section 112(f) of the Act, for which construction or reconstruction is commenced after the proposal date of a relevant standard established pursuant to section 112(d) of the Act but before the proposal date of the relevant standard established pursuant to section 112(f) [see § 63.6(b)(4)]; or

(vii) [Reserved]; or

(viii) [Reserved]; or

(ix) When an emission standard promulgated under this part is more stringent than the standard proposed (see § 63.6(b)(3)), the owner or operator of a new or reconstructed source subject to that standard for which construction or reconstruction is commenced between the proposal and promulgation dates of the standard shall comply with performance testing requirements within 180 days after the standard's effective date, or within 180 days after startup of the source, whichever is later. If the promulgated standard is more stringent than the proposed standard, the owner or operator may choose to demonstrate compliance with either the proposed or the promulgated standard. If the owner or operator chooses to comply with the proposed standard initially, the owner or operator shall conduct a second performance test within 3 years and 180 days after the effective date of the standard, or after startup of the source, whichever is later, to demonstrate compliance with the promulgated standard.

(3) The Administrator may require an owner or operator to conduct performance tests at the affected source at any other time when the action is authorized by section 114 of the Act.

(b) *Notification of performance test.* (1) The owner or operator of an affected source shall notify the Administrator in writing of his or her intention to conduct a performance test at least 60 calendar days before the performance test is scheduled to begin to allow the Administrator, upon request, to review and approve the site-specific test plan required under paragraph (c) of this section and to have an observer present during the test. Observation of the performance test by the Administrator is optional.

(2) In the event the owner or operator is unable to conduct the performance test on the date specified in the notification requirement specified in paragraph (b)(1) of this section, due to unforeseeable circumstances beyond his or her control, the owner or operator shall notify the Administrator within 5 days prior to the scheduled performance test date and specify the date when the performance test is rescheduled. This notification of delay in conducting the performance test shall not relieve the owner or operator of legal responsibility for compliance with any other applicable provisions of this part or with any other applicable Federal, State, or local requirement, nor will it prevent the Administrator from implementing or enforcing this part or taking any other action under the Act.

(c) *Quality assurance program.* (1) The results of the quality assurance program required in this paragraph will be considered by the Administrator when he/she determines the validity of a performance test.

(2)(i) *Submission of site-specific test plan.* Before conducting a required performance test, the owner or operator of an affected source shall develop and, if requested by the Administrator, shall submit a site-specific test plan to the Administrator for approval. The test plan shall include a test program summary, the test schedule, data quality objectives, and both an internal and external quality assurance (QA) program. Data quality objectives are the pretest expectations of precision, accuracy, and completeness of data.

(ii) The internal QA program shall include, at a minimum, the activities planned by routine operators and analysts to provide an assessment of test

data precision; an example of internal QA is the sampling and analysis of replicate samples.

(iii) The external QA program shall include, at a minimum, application of plans for a test method performance audit (PA) during the performance test. The PA's consist of blind audit samples provided by the Administrator and analyzed during the performance test in order to provide a measure of test data bias. The external QA program may also include systems audits that include the opportunity for on-site evaluation by the Administrator of instrument calibration, data validation, sample logging, and documentation of quality control data and field maintenance activities.

(iv) The owner or operator of an affected source shall submit the site-specific test plan to the Administrator upon the Administrator's request at least 60 calendar days before the performance test is scheduled to take place, that is, simultaneously with the notification of intention to conduct a performance test required under paragraph (b) of this section, or on a mutually agreed upon date.

(v) The Administrator may request additional relevant information after the submittal of a site-specific test plan.

(3) *Approval of site-specific test plan.* (i) The Administrator will notify the owner or operator of approval or intention to deny approval of the site-specific test plan (if review of the site-specific test plan is requested) within 30 calendar days after receipt of the original plan and within 30 calendar days after receipt of any supplementary information that is submitted under paragraph (c)(3)(i)(B) of this section. Before disapproving any site-specific test plan, the Administrator will notify the applicant of the Administrator's intention to disapprove the plan together with—

(A) Notice of the information and findings on which the intended disapproval is based; and

(B) Notice of opportunity for the owner or operator to present, within 30 calendar days after he/she is notified of the intended disapproval, additional information to the Administrator before final action on the plan.

(ii) In the event that the Administrator fails to approve or disapprove the site-specific test plan within the time period specified in paragraph (c)(3)(i) of this section, the following conditions shall apply:

(A) If the owner or operator intends to demonstrate compliance using the test method(s) specified in the relevant standard, the owner or operator shall conduct the performance test within the time specified in this section using the specified method(s);

(B) If the owner or operator intends to demonstrate compliance by using an alternative to any test method specified in the relevant standard, the owner or operator shall refrain from conducting the performance test until the Administrator approves the use of the alternative method when the Administrator approves the site-specific test plan (if review of the site-specific test plan is requested) or until after the alternative method is approved (see paragraph (f) of this section). If the Administrator does not approve the site-specific test plan (if review is requested) or the use of the alternative method within 30 days before the test is scheduled to begin, the performance test dates specified in paragraph (a) of this section may be extended such that the owner or operator shall conduct the performance test within 60 calendar days after the Administrator approves the site-specific test plan or after use of the alternative method is approved. Notwithstanding the requirements in the preceding two sentences, the owner or operator may proceed to conduct the performance test as required in this section (without the Administrator's prior approval of the site-specific test plan) if he/she subsequently chooses to use the specified testing and monitoring methods instead of an alternative.

(iii) Neither the submission of a site-specific test plan for approval, nor the Administrator's approval or disapproval of a plan, nor the Administrator's failure to approve or disapprove a plan in a timely manner shall—

(A) Relieve an owner or operator of legal responsibility for compliance with any applicable provisions of this part or with any other applicable Federal, State, or local requirement; or

(B) Prevent the Administrator from implementing or enforcing this part or taking any other action under the Act.

(4)(i) *Performance test method audit program.* The owner or operator shall analyze performance audit (PA) samples during each performance test. The owner or operator shall request performance audit materials 45 days prior to the test date. Cylinder audit gases may be obtained by contacting the Cylinder Audit Coordinator, Quality Assurance Division (MD-77B), Atmospheric Research and Exposure Assessment Laboratory (AREAL), U.S. EPA, Research Triangle Park, North Carolina 27711. All other audit materials may be obtained by contacting the Source Test Audit Coordinator, Quality Assurance Division (MD-77B), AREAL, U.S. EPA, Research Triangle Park, North Carolina 27711.

(ii) The Administrator will have sole discretion to require any subsequent remedial actions of the owner or operator based on the PA results.

(iii) If the Administrator fails to provide required PA materials to an owner or operator of an affected source in time to analyze the PA samples during a performance test, the requirement to conduct a PA under this paragraph shall be waived for such source for that performance test. Waiver under this paragraph of the requirement to conduct a PA for a particular performance test does not constitute a waiver of the requirement to conduct a PA for future required performance tests.

(d) *Performance testing facilities.* If required to do performance testing, the owner or operator of each new source and, at the request of the Administrator, the owner or operator of each existing source, shall provide performance testing facilities as follows:

(1) Sampling ports adequate for test methods applicable to such source. This includes:

(i) Constructing the air pollution control system such that volumetric flow rates and pollutant emission rates can be accurately determined by applicable test methods and procedures; and

(ii) Providing a stack or duct free of cyclonic flow during performance tests, as demonstrated by applicable test methods and procedures;

(2) Safe sampling platform(s);

(3) Safe access to sampling platform(s);

(4) Utilities for sampling and testing equipment; and

(5) Any other facilities that the Administrator deems necessary for safe and adequate testing of a source.

(e) *Conduct of performance tests.* (1) Performance tests shall be conducted under such conditions as the Administrator specifies to the owner or operator based on representative performance (i.e., performance based on normal operating conditions) of the affected source. Operations during periods of startup, shutdown, and malfunction shall not constitute representative conditions for the purpose of a performance test, nor shall emissions in excess of the level of the relevant standard during periods of startup, shutdown, and malfunction be considered a violation of the relevant standard unless otherwise specified in the relevant standard or a determination of noncompliance is made under § 63.6(e). Upon request, the owner or operator shall make available to the Administrator such records as may be necessary to determine the conditions of performance tests.

(2) Performance tests shall be conducted and data shall be reduced in accordance with the test methods and procedures set forth in this section, in each relevant standard, and, if required, in applicable appendices of parts 51, 60, 61, and 63 of this chapter unless the Administrator—

(i) Specifies or approves, in specific cases, the use of a test method with minor changes in methodology; or

(ii) Approves the use of an alternative test method, the results of which the Administrator has determined to be adequate for indicating whether a specific affected source is in compliance; or

(iii) Approves shorter sampling times and smaller sample volumes when necessitated by process variables or other factors; or

(iv) Waives the requirement for performance tests because the owner or operator of an affected source has demonstrated by other means to the Administrator's satisfaction that the affected source is in compliance with the relevant standard.

(3) Unless otherwise specified in a relevant standard or test method, each performance test shall consist of three separate runs using the applicable test method. Each run shall be conducted for the time and under the conditions specified in the relevant standard. For the purpose of determining compliance with a relevant standard, the arithmetic mean of the results of the three runs shall apply. Upon receiving approval from the Administrator, results of a test run may be replaced with results of an additional test run in the event that—

(i) A sample is accidentally lost after the testing team leaves the site; or

(ii) Conditions occur in which one of the three runs must be discontinued because of forced shutdown; or

(iii) Extreme meteorological conditions occur; or

(iv) Other circumstances occur that are beyond the owner or operator's control.

(4) Nothing in paragraphs (e)(1) through (e)(3) of this section shall be construed to abrogate the Administrator's authority to require testing under section 114 of the Act.

(f) *Use of an alternative test method—*

(1) *General.* Until permission to use an alternative test method has been granted by the Administrator under this paragraph, the owner or operator of an affected source remains subject to the requirements of this section and the relevant standard.

(2) The owner or operator of an affected source required to do performance testing by a relevant standard may use an alternative test method from that specified in the standard provided that the owner or operator—

(i) Notifies the Administrator of his or her intention to use an alternative test method not later than with the submittal of the site-specific test plan (if requested by the Administrator) or at least 60 days before the performance test is scheduled to begin if a site-specific test plan is not submitted;

(ii) Uses Method 301 in appendix A of this part to validate the alternative test method; and

(iii) Submits the results of the Method 301 validation process along with the notification of intention and the justification for not using the specified

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test method. The owner or operator may submit the information required in this paragraph well in advance of the deadline specified in paragraph (f)(2)(i) of this section to ensure a timely review by the Administrator in order to meet the performance test date specified in this section or the relevant standard.

(3) The Administrator will determine whether the owner or operator's validation of the proposed alternative test method is adequate when the Administrator approves or disapproves the site-specific test plan required under paragraph (c) of this section. If the Administrator finds reasonable grounds to dispute the results obtained by the Method 301 validation process, the Administrator may require the use of a test method specified in a relevant standard.

(4) If the Administrator finds reasonable grounds to dispute the results obtained by an alternative test method for the purposes of demonstrating compliance with a relevant standard, the Administrator may require the use of a test method specified in a relevant standard.

(5) If the owner or operator uses an alternative test method for an affected source during a required performance test, the owner or operator of such source shall continue to use the alternative test method for subsequent performance tests at that affected source until he or she receives approval from the Administrator to use another test method as allowed under § 63.7(f).

(6) Neither the validation and approval process nor the failure to validate an alternative test method shall abrogate the owner or operator's responsibility to comply with the requirements of this part.

(g) *Data analysis, recordkeeping, and reporting.* (1) Unless otherwise specified in a relevant standard or test method, or as otherwise approved by the Administrator in writing, results of a performance test shall include the analysis of samples, determination of emissions, and raw data. A performance test is "completed" when field sample collection is terminated. The owner or operator of an affected source shall report the results of the performance test to the Administrator before the close

of business on the 60th day following the completion of the performance test, unless specified otherwise in a relevant standard or as approved otherwise in writing by the Administrator (see § 63.9(i)). The results of the performance test shall be submitted as part of the notification of compliance status required under § 63.9(h). Before a title V permit has been issued to the owner or operator of an affected source, the owner or operator shall send the results of the performance test to the Administrator. After a title V permit has been issued to the owner or operator of an affected source, the owner or operator shall send the results of the performance test to the appropriate permitting authority.

(2) [Reserved]

(3) For a minimum of 5 years after a performance test is conducted, the owner or operator shall retain and make available, upon request, for inspection by the Administrator the records or results of such performance test and other data needed to determine emissions from an affected source.

(h) *Waiver of performance tests.* (1) Until a waiver of a performance testing requirement has been granted by the Administrator under this paragraph, the owner or operator of an affected source remains subject to the requirements of this section.

(2) Individual performance tests may be waived upon written application to the Administrator if, in the Administrator's judgment, the source is meeting the relevant standard(s) on a continuous basis, or the source is being operated under an extension of compliance, or the owner or operator has requested an extension of compliance and the Administrator is still considering that request.

(3) *Request to waive a performance test.*

(i) If a request is made for an extension of compliance under § 63.6(i), the application for a waiver of an initial performance test shall accompany the information required for the request for an extension of compliance. If no extension of compliance is requested or if the owner or operator has requested an extension of compliance and the Administrator is still considering that request, the application for a waiver of

an initial performance test shall be submitted at least 60 days before the performance test if the site-specific test plan under paragraph (c) of this section is not submitted.

(ii) If an application for a waiver of a subsequent performance test is made, the application may accompany any required compliance progress report, compliance status report, or excess emissions and continuous monitoring system performance report [such as those required under § 63.6(i), § 63.9(h), and § 63.10(e) or specified in a relevant standard or in the source's title V permit], but it shall be submitted at least 60 days before the performance test if the site-specific test plan required under paragraph (c) of this section is not submitted.

(iii) Any application for a waiver of a performance test shall include information justifying the owner or operator's request for a waiver, such as the technical or economic infeasibility, or the impracticality, of the affected source performing the required test.

(4) *Approval of request to waive performance test.* The Administrator will approve or deny a request for a waiver of a performance test made under paragraph (h)(3) of this section when he/she—

(i) Approves or denies an extension of compliance under § 63.6(i)(8); or

(ii) Approves or disapproves a site-specific test plan under § 63.7(c)(3); or

(iii) Makes a determination of compliance following the submission of a required compliance status report or excess emissions and continuous monitoring systems performance report; or

(iv) Makes a determination of suitable progress towards compliance following the submission of a compliance progress report, whichever is applicable.

(5) Approval of any waiver granted under this section shall not abrogate the Administrator's authority under the Act or in any way prohibit the Administrator from later canceling the waiver. The cancellation will be made only after notice is given to the owner or operator of the affected source.

#### § 63.8 Monitoring requirements.

(a) *Applicability.* (1)(i) Unless otherwise specified in a relevant standard,

this section applies to the owner or operator of an affected source required to do monitoring under that standard.

(ii) Relevant standards established under this part will specify monitoring systems, methods, or procedures, monitoring frequency, and other pertinent requirements for source(s) regulated by those standards. This section specifies general monitoring requirements such as those governing the conduct of monitoring and requests to use alternative monitoring methods. In addition, this section specifies detailed requirements that apply to affected sources required to use continuous monitoring systems (CMS) under a relevant standard.

(2) For the purposes of this part, all CMS required under relevant standards shall be subject to the provisions of this section upon promulgation of performance specifications for CMS as specified in the relevant standard or otherwise by the Administrator.

(3) [Reserved]

(4) Additional monitoring requirements for control devices used to comply with provisions in relevant standards of this part are specified in § 63.11.

(b) *Conduct of monitoring.* (1) Monitoring shall be conducted as set forth in this section and the relevant standard(s) unless the Administrator—

(i) Specifies or approves the use of minor changes in methodology for the specified monitoring requirements and procedures; or

(ii) Approves the use of alternatives to any monitoring requirements or procedures.

(iii) Owners or operators with flares subject to § 63.11(b) are not subject to the requirements of this section unless otherwise specified in the relevant standard.

(2)(i) When the effluents from a single affected source, or from two or more affected sources, are combined before being released to the atmosphere, the owner or operator shall install an applicable CMS on each effluent.

(ii) If the relevant standard is a mass emission standard and the effluent from one affected source is released to the atmosphere through more than one

point, the owner or operator shall install an applicable CMS at each emission point unless the installation of fewer systems is—

(A) Approved by the Administrator; or

(B) Provided for in a relevant standard (e.g., instead of requiring that a CMS be installed at each emission point before the effluents from those points are channeled to a common control device, the standard specifies that only one CMS is required to be installed at the vent of the control device).

(3) When more than one CMS is used to measure the emissions from one affected source (e.g., multiple breechings, multiple outlets), the owner or operator shall report the results as required for each CMS. However, when one CMS is used as a backup to another CMS, the owner or operator shall report the results from the CMS used to meet the monitoring requirements of this part. If both such CMS are used during a particular reporting period to meet the monitoring requirements of this part, then the owner or operator shall report the results from each CMS for the relevant compliance period.

(c) *Operation and maintenance of continuous monitoring systems.* (1) The owner or operator of an affected source shall maintain and operate each CMS as specified in this section, or in a relevant standard, and in a manner consistent with good air pollution control practices.

(i) The owner or operator of an affected source shall ensure the immediate repair or replacement of CMS parts to correct "routine" or otherwise predictable CMS malfunctions as defined in the source's startup, shutdown, and malfunction plan required by § 63.6(e)(3). The owner or operator shall keep the necessary parts for routine repairs of the affected equipment readily available. If the plan is followed and the CMS repaired immediately, this action shall be reported in the semi-annual startup, shutdown, and malfunction report required under § 63.10(d)(5)(i).

(ii) For those malfunctions or other events that affect the CMS and are not addressed by the startup, shutdown, and malfunction plan, the owner or op-

erator shall report actions that are not consistent with the startup, shutdown, and malfunction plan within 24 hours after commencing actions inconsistent with the plan. The owner or operator shall send a follow-up report within 2 weeks after commencing actions inconsistent with the plan that either certifies that corrections have been made or includes a corrective action plan and schedule. The owner or operator shall provide proof that repair parts have been ordered or any other records that would indicate that the delay in making repairs is beyond his or her control.

(iii) The Administrator's determination of whether acceptable operation and maintenance procedures are being used will be based on information that may include, but is not limited to, review of operation and maintenance procedures, operation and maintenance records, manufacturing recommendations and specifications, and inspection of the CMS. Operation and maintenance procedures written by the CMS manufacturer and other guidance also can be used to maintain and operate each CMS.

(2) All CMS shall be installed such that representative measurements of emissions or process parameters from the affected source are obtained. In addition, CEMS shall be located according to procedures contained in the applicable performance specification(s).

(3) All CMS shall be installed, operational, and the data verified as specified in the relevant standard either prior to or in conjunction with conducting performance tests under § 63.7. Verification of operational status shall, at a minimum, include completion of the manufacturer's written specifications or recommendations for installation, operation, and calibration of the system.

(4) Except for system breakdowns, out-of-control periods, repairs, maintenance periods, calibration checks, and zero (low-level) and high-level calibration drift adjustments, all CMS, including COMS and CEMS, shall be in continuous operation and shall meet minimum frequency of operation requirements as follows:

(i) All COMS shall complete a minimum of one cycle of sampling and analyzing for each successive 10-second period and one cycle of data recording for each successive 6-minute period.

(ii) All CEMS for measuring emissions other than opacity shall complete a minimum of one cycle of operation (sampling, analyzing, and data recording) for each successive 15-minute period.

(5) Unless otherwise approved by the Administrator, minimum procedures for COMS shall include a method for producing a simulated zero opacity condition and an upscale (high-level) opacity condition using a certified neutral density filter or other related technique to produce a known obscuration of the light beam. Such procedures shall provide a system check of all the analyzer's internal optical surfaces and all electronic circuitry, including the lamp and photodetector assembly normally used in the measurement of opacity.

(6) The owner or operator of a CMS installed in accordance with the provisions of this part and the applicable CMS performance specification(s) shall check the zero (low-level) and high-level calibration drifts at least once daily in accordance with the written procedure specified in the performance evaluation plan developed under paragraphs (e)(3)(i) and (e)(3)(ii) of this section. The zero (low-level) and high-level calibration drifts shall be adjusted, at a minimum, whenever the 24-hour zero (low-level) drift exceeds two times the limits of the applicable performance specification(s) specified in the relevant standard. The system must allow the amount of excess zero (low-level) and high-level drift measured at the 24-hour interval checks to be recorded and quantified, whenever specified. For COMS, all optical and instrumental surfaces exposed to the effluent gases shall be cleaned prior to performing the zero (low-level) and high-level drift adjustments; the optical surfaces and instrumental surfaces shall be cleaned when the cumulative automatic zero compensation, if applicable, exceeds 4 percent opacity.

(7)(i) A CMS is out of control if—

(A) The zero (low-level), mid-level (if applicable), or high-level calibration

drift (CD) exceeds two times the applicable CD specification in the applicable performance specification or in the relevant standard; or

(B) The CMS fails a performance test audit (e.g., cylinder gas audit), relative accuracy audit, relative accuracy test audit, or linearity test audit; or

(C) The COMS CD exceeds two times the limit in the applicable performance specification in the relevant standard.

(ii) When the CMS is out of control, the owner or operator of the affected source shall take the necessary corrective action and shall repeat all necessary tests which indicate that the system is out of control. The owner or operator shall take corrective action and conduct retesting until the performance requirements are below the applicable limits. The beginning of the out-of-control period is the hour the owner or operator conducts a performance check (e.g., calibration drift) that indicates an exceedance of the performance requirements established under this part. The end of the out-of-control period is the hour following the completion of corrective action and successful demonstration that the system is within the allowable limits. During the period the CMS is out of control, recorded data shall not be used in data averages and calculations, or to meet any data availability requirement established under this part.

(8) The owner or operator of a CMS that is out of control as defined in paragraph (c)(7) of this section shall submit all information concerning out-of-control periods, including start and end dates and hours and descriptions of corrective actions taken, in the excess emissions and continuous monitoring system performance report required in §63.10(e)(3).

(d) *Quality control program.* (1) The results of the quality control program required in this paragraph will be considered by the Administrator when he/she determines the validity of monitoring data.

(2) The owner or operator of an affected source that is required to use a CMS and is subject to the monitoring requirements of this section and a relevant standard shall develop and implement a CMS quality control program. As part of the quality control

program, the owner or operator shall develop and submit to the Administrator for approval upon request a site-specific performance evaluation test plan for the CMS performance evaluation required in paragraph (e)(3)(i) of this section, according to the procedures specified in paragraph (e). In addition, each quality control program shall include, at a minimum, a written protocol that describes procedures for each of the following operations:

- (i) Initial and any subsequent calibration of the CMS;
- (ii) Determination and adjustment of the calibration drift of the CMS;
- (iii) Preventive maintenance of the CMS, including spare parts inventory;
- (iv) Data recording, calculations, and reporting;
- (v) Accuracy audit procedures, including sampling and analysis methods; and
- (vi) Program of corrective action for a malfunctioning CMS.

(3) The owner or operator shall keep these written procedures on record for the life of the affected source or until the affected source is no longer subject to the provisions of this part, to be made available for inspection, upon request, by the Administrator. If the performance evaluation plan is revised, the owner or operator shall keep previous (i.e., superseded) versions of the performance evaluation plan on record to be made available for inspection, upon request, by the Administrator, for a period of 5 years after each revision to the plan. Where relevant, e.g., program of corrective action for a malfunctioning CMS, these written procedures may be incorporated as part of the affected source's startup, shutdown, and malfunction plan to avoid duplication of planning and record-keeping efforts.

(e) *Performance evaluation of continuous monitoring systems*—(1) *General*. When required by a relevant standard, and at any other time the Administrator may require under section 114 of the Act, the owner or operator of an affected source being monitored shall conduct a performance evaluation of the CMS. Such performance evaluation shall be conducted according to the applicable specifications and procedures

described in this section or in the relevant standard.

(2) *Notification of performance evaluation*. The owner or operator shall notify the Administrator in writing of the date of the performance evaluation simultaneously with the notification of the performance test date required under §63.7(b) or at least 60 days prior to the date the performance evaluation is scheduled to begin if no performance test is required.

(3)(i) *Submission of site-specific performance evaluation test plan*. Before conducting a required CMS performance evaluation, the owner or operator of an affected source shall develop and submit a site-specific performance evaluation test plan to the Administrator for approval upon request. The performance evaluation test plan shall include the evaluation program objectives, an evaluation program summary, the performance evaluation schedule, data quality objectives, and both an internal and external QA program. Data quality objectives are the pre-evaluation expectations of precision, accuracy, and completeness of data.

(ii) The internal QA program shall include, at a minimum, the activities planned by routine operators and analysts to provide an assessment of CMS performance. The external QA program shall include, at a minimum, systems audits that include the opportunity for on-site evaluation by the Administrator of instrument calibration, data validation, sample logging, and documentation of quality control data and field maintenance activities.

(iii) The owner or operator of an affected source shall submit the site-specific performance evaluation test plan to the Administrator (if requested) at least 60 days before the performance test or performance evaluation is scheduled to begin, or on a mutually agreed upon date, and review and approval of the performance evaluation test plan by the Administrator will occur with the review and approval of the site-specific test plan (if review of the site-specific test plan is requested).

(iv) The Administrator may request additional relevant information after the submittal of a site-specific performance evaluation test plan.

(v) In the event that the Administrator fails to approve or disapprove the site-specific performance evaluation test plan within the time period specified in § 63.7(c)(3), the following conditions shall apply:

(A) If the owner or operator intends to demonstrate compliance using the monitoring method(s) specified in the relevant standard, the owner or operator shall conduct the performance evaluation within the time specified in this subpart using the specified method(s);

(B) If the owner or operator intends to demonstrate compliance by using an alternative to a monitoring method specified in the relevant standard, the owner or operator shall refrain from conducting the performance evaluation until the Administrator approves the use of the alternative method. If the Administrator does not approve the use of the alternative method within 30 days before the performance evaluation is scheduled to begin, the performance evaluation deadlines specified in paragraph (e)(4) of this section may be extended such that the owner or operator shall conduct the performance evaluation within 60 calendar days after the Administrator approves the use of the alternative method. Notwithstanding the requirements in the preceding two sentences, the owner or operator may proceed to conduct the performance evaluation as required in this section (without the Administrator's prior approval of the site-specific performance evaluation test plan) if he/she subsequently chooses to use the specified monitoring method(s) instead of an alternative.

(vi) Neither the submission of a site-specific performance evaluation test plan for approval, nor the Administrator's approval or disapproval of a plan, nor the Administrator's failure to approve or disapprove a plan in a timely manner shall—

(A) Relieve an owner or operator of legal responsibility for compliance with any applicable provisions of this part or with any other applicable Federal, State, or local requirement; or

(B) Prevent the Administrator from implementing or enforcing this part or taking any other action under the Act.

(4) *Conduct of performance evaluation and performance evaluation dates.* The

owner or operator of an affected source shall conduct a performance evaluation of a required CMS during any performance test required under § 63.7 in accordance with the applicable performance specification as specified in the relevant standard. Notwithstanding the requirement in the previous sentence, if the owner or operator of an affected source elects to submit COMS data for compliance with a relevant opacity emission standard as provided under § 63.6(h)(7), he/she shall conduct a performance evaluation of the COMS as specified in the relevant standard, before the performance test required under § 63.7 is conducted in time to submit the results of the performance evaluation as specified in paragraph (e)(5)(ii) of this section. If a performance test is not required, or the requirement for a performance test has been waived under § 63.7(h), the owner or operator of an affected source shall conduct the performance evaluation not later than 180 days after the appropriate compliance date for the affected source, as specified in § 63.7(a), or as otherwise specified in the relevant standard.

(5) *Reporting performance evaluation results.* (i) The owner or operator shall furnish the Administrator a copy of a written report of the results of the performance evaluation simultaneously with the results of the performance test required under § 63.7 or within 60 days of completion of the performance evaluation if no test is required, unless otherwise specified in a relevant standard. The Administrator may request that the owner or operator submit the raw data from a performance evaluation in the report of the performance evaluation results.

(ii) The owner or operator of an affected source using a COMS to determine opacity compliance during any performance test required under § 63.7 and described in § 63.6(d)(6) shall furnish the Administrator two or, upon request, three copies of a written report of the results of the COMS performance evaluation under this paragraph. The copies shall be provided at least 15 calendar days before the performance test required under § 63.7 is conducted.

(f) *Use of an alternative monitoring method—(1) General.* Until permission

to use an alternative monitoring method has been granted by the Administrator under this paragraph, the owner or operator of an affected source remains subject to the requirements of this section and the relevant standard.

(2) After receipt and consideration of written application, the Administrator may approve alternatives to any monitoring methods or procedures of this part including, but not limited to, the following:

(i) Alternative monitoring requirements when installation of a CMS specified by a relevant standard would not provide accurate measurements due to liquid water or other interferences caused by substances within the effluent gases;

(ii) Alternative monitoring requirements when the affected source is infrequently operated;

(iii) Alternative monitoring requirements to accommodate CEMS that require additional measurements to correct for stack moisture conditions;

(iv) Alternative locations for installing CMS when the owner or operator can demonstrate that installation at alternate locations will enable accurate and representative measurements;

(v) Alternate methods for converting pollutant concentration measurements to units of the relevant standard;

(vi) Alternate procedures for performing daily checks of zero (low-level) and high-level drift that do not involve use of high-level gases or test cells;

(vii) Alternatives to the American Society for Testing and Materials (ASTM) test methods or sampling procedures specified by any relevant standard;

(viii) Alternative CMS that do not meet the design or performance requirements in this part, but adequately demonstrate a definite and consistent relationship between their measurements and the measurements of opacity by a system complying with the requirements as specified in the relevant standard. The Administrator may require that such demonstration be performed for each affected source; or

(ix) Alternative monitoring requirements when the effluent from a single affected source or the combined effluent from two or more affected sources

is released to the atmosphere through more than one point.

(3) If the Administrator finds reasonable grounds to dispute the results obtained by an alternative monitoring method, requirement, or procedure, the Administrator may require the use of a method, requirement, or procedure specified in this section or in the relevant standard. If the results of the specified and alternative method, requirement, or procedure do not agree, the results obtained by the specified method, requirement, or procedure shall prevail.

(4)(i) *Request to use alternative monitoring method.* An owner or operator who wishes to use an alternative monitoring method shall submit an application to the Administrator as described in paragraph (f)(4)(ii) of this section, below. The application may be submitted at any time provided that the monitoring method is not used to demonstrate compliance with a relevant standard or other requirement. If the alternative monitoring method is to be used to demonstrate compliance with a relevant standard, the application shall be submitted not later than with the site-specific test plan required in §63.7(c) (if requested) or with the site-specific performance evaluation plan (if requested) or at least 60 days before the performance evaluation is scheduled to begin.

(ii) The application shall contain a description of the proposed alternative monitoring system and a performance evaluation test plan, if required, as specified in paragraph (e)(3) of this section. In addition, the application shall include information justifying the owner or operator's request for an alternative monitoring method, such as the technical or economic infeasibility, or the impracticality, of the affected source using the required method.

(iii) The owner or operator may submit the information required in this paragraph well in advance of the submittal dates specified in paragraph (f)(4)(i) above to ensure a timely review by the Administrator in order to meet the compliance demonstration date specified in this section or the relevant standard.

(5) *Approval of request to use alternative monitoring method.* (i) The Administrator will notify the owner or operator of approval or intention to deny approval of the request to use an alternative monitoring method within 30 calendar days after receipt of the original request and within 30 calendar days after receipt of any supplementary information that is submitted. Before disapproving any request to use an alternative monitoring method, the Administrator will notify the applicant of the Administrator's intention to disapprove the request together with—

(A) Notice of the information and findings on which the intended disapproval is based; and

(B) Notice of opportunity for the owner or operator to present additional information to the Administrator before final action on the request. At the time the Administrator notifies the applicant of his or her intention to disapprove the request, the Administrator will specify how much time the owner or operator will have after being notified of the intended disapproval to submit the additional information.

(ii) The Administrator may establish general procedures and criteria in a relevant standard to accomplish the requirements of paragraph (f)(5)(i) of this section.

(iii) If the Administrator approves the use of an alternative monitoring method for an affected source under paragraph (f)(5)(i) of this section, the owner or operator of such source shall continue to use the alternative monitoring method until he or she receives approval from the Administrator to use another monitoring method as allowed by § 63.8(f).

(6) *Alternative to the relative accuracy test.* An alternative to the relative accuracy test for CEMS specified in a relevant standard may be requested as follows:

(i) *Criteria for approval of alternative procedures.* An alternative to the test method for determining relative accuracy is available for affected sources with emission rates demonstrated to be less than 50 percent of the relevant standard. The owner or operator of an affected source may petition the Administrator under paragraph (f)(6)(ii) of

this section to substitute the relative accuracy test in section 7 of Performance Specification 2 with the procedures in section 10 if the results of a performance test conducted according to the requirements in § 63.7, or other tests performed following the criteria in § 63.7, demonstrate that the emission rate of the pollutant of interest in the units of the relevant standard is less than 50 percent of the relevant standard. For affected sources subject to emission limitations expressed as control efficiency levels, the owner or operator may petition the Administrator to substitute the relative accuracy test with the procedures in section 10 of Performance Specification 2 if the control device exhaust emission rate is less than 50 percent of the level needed to meet the control efficiency requirement. The alternative procedures do not apply if the CEMS is used continuously to determine compliance with the relevant standard.

(ii) *Petition to use alternative to relative accuracy test.* The petition to use an alternative to the relative accuracy test shall include a detailed description of the procedures to be applied, the location and the procedure for conducting the alternative, the concentration or response levels of the alternative relative accuracy materials, and the other equipment checks included in the alternative procedure(s). The Administrator will review the petition for completeness and applicability. The Administrator's determination to approve an alternative will depend on the intended use of the CEMS data and may require specifications more stringent than in Performance Specification 2.

(iii) *Rescission of approval to use alternative to relative accuracy test.* The Administrator will review the permission to use an alternative relative accuracy test and may rescind such permission if the CEMS data from a successful completion of the alternative relative accuracy procedure indicate that the affected source's emissions are approaching the level of the relevant standard. The criterion for reviewing the permission is that the collection of CEMS data shows that emissions have exceeded 70 percent of the

relevant standard for any averaging period, as specified in the relevant standard. For affected sources subject to emission limitations expressed as control efficiency levels, the criterion for reviewing the permission is that the collection of CEMS data shows that exhaust emissions have exceeded 70 percent of the level needed to meet the control efficiency requirement for any averaging period, as specified in the relevant standard. The owner or operator of the affected source shall maintain records and determine the level of emissions relative to the criterion for permission to use an alternative for relative accuracy testing. If this criterion is exceeded, the owner or operator shall notify the Administrator within 10 days of such occurrence and include a description of the nature and cause of the increased emissions. The Administrator will review the notification and may rescind permission to use an alternative and require the owner or operator to conduct a relative accuracy test of the CEMS as specified in section 7 of Performance Specification 2.

(g) *Reduction of monitoring data.* (1) The owner or operator of each CMS shall reduce the monitoring data as specified in this paragraph. In addition, each relevant standard may contain additional requirements for reducing monitoring data. When additional requirements are specified in a relevant standard, the standard will identify any unnecessary or duplicated requirements in this paragraph that the owner or operator need not comply with.

(2) The owner or operator of each COMS shall reduce all data to 6-minute averages calculated from 36 or more data points equally spaced over each 6-minute period. Data from CEMS for measurement other than opacity, unless otherwise specified in the relevant standard, shall be reduced to 1-hour averages computed from four or more data points equally spaced over each 1-hour period, except during periods when calibration, quality assurance, or maintenance activities pursuant to provisions of this part are being performed. During these periods, a valid hourly average shall consist of at least two data points with each representing a 15-minute period. Alternatively, an arithmetic or integrated 1-hour aver-

age of CEMS data may be used. Time periods for averaging are defined in § 63.2.

(3) The data may be recorded in reduced or nonreduced form (e.g., ppm pollutant and percent O<sub>2</sub> or ng/J of pollutant).

(4) All emission data shall be converted into units of the relevant standard for reporting purposes using the conversion procedures specified in that standard. After conversion into units of the relevant standard, the data may be rounded to the same number of significant digits as used in that standard to specify the emission limit (e.g., rounded to the nearest 1 percent opacity).

(5) Monitoring data recorded during periods of unavoidable CMS breakdowns, out-of-control periods, repairs, maintenance periods, calibration checks, and zero (low-level) and high-level adjustments shall not be included in any data average computed under this part.

#### § 63.9 Notification requirements.

(a) *Applicability and general information.* (1) The requirements in this section apply to owners and operators of affected sources that are subject to the provisions of this part, unless specified otherwise in a relevant standard.

(2) For affected sources that have been granted an extension of compliance under subpart D of this part, the requirements of this section do not apply to those sources while they are operating under such compliance extensions.

(3) If any State requires a notice that contains all the information required in a notification listed in this section, the owner or operator may send the Administrator a copy of the notice sent to the State to satisfy the requirements of this section for that notification.

(4)(i) Before a State has been delegated the authority to implement and enforce notification requirements established under this part, the owner or operator of an affected source in such State subject to such requirements shall submit notifications to the appropriate Regional Office of the EPA (to

the attention of the Director of the Division indicated in the list of the EPA Regional Offices in § 63.13).

(ii) After a State has been delegated the authority to implement and enforce notification requirements established under this part, the owner or operator of an affected source in such State subject to such requirements shall submit notifications to the delegated State authority (which may be the same as the permitting authority). In addition, if the delegated (permitting) authority is the State, the owner or operator shall send a copy of each notification submitted to the State to the appropriate Regional Office of the EPA, as specified in paragraph (a)(4)(i) of this section. The Regional Office may waive this requirement for any notifications at its discretion.

(b) *Initial notifications.* (1)(i) The requirements of this paragraph apply to the owner or operator of an affected source when such source becomes subject to a relevant standard.

(ii) If an area source that otherwise would be subject to an emission standard or other requirement established under this part if it were a major source subsequently increases its emissions of hazardous air pollutants (or its potential to emit hazardous air pollutants) such that the source is a major source that is subject to the emission standard or other requirement, such source shall be subject to the notification requirements of this section.

(iii) Affected sources that are required under this paragraph to submit an initial notification may use the application for approval of construction or reconstruction under § 63.5(d) of this subpart, if relevant, to fulfill the initial notification requirements of this paragraph.

(2) The owner or operator of an affected source that has an initial startup before the effective date of a relevant standard under this part shall notify the Administrator in writing that the source is subject to the relevant standard. The notification, which shall be submitted not later than 120 calendar days after the effective date of the relevant standard (or within 120 calendar days after the source becomes subject to the relevant

standard), shall provide the following information:

(i) The name and address of the owner or operator;

(ii) The address (i.e., physical location) of the affected source;

(iii) An identification of the relevant standard, or other requirement, that is the basis of the notification and the source's compliance date;

(iv) A brief description of the nature, size, design, and method of operation of the source, including its operating design capacity and an identification of each point of emission for each hazardous air pollutant, or if a definitive identification is not yet possible, a preliminary identification of each point of emission for each hazardous air pollutant; and

(v) A statement of whether the affected source is a major source or an area source.

(3) The owner or operator of a new or reconstructed affected source, or a source that has been reconstructed such that it is an affected source, that has an initial startup after the effective date of a relevant standard under this part and for which an application for approval of construction or reconstruction is not required under § 63.5(d), shall notify the Administrator in writing that the source is subject to the relevant standard no later than 120 days after initial startup. The notification shall provide all the information required in paragraphs (b)(2)(i) through (b)(2)(v) of this section, delivered or postmarked with the notification required in paragraph (b)(5).

(4) The owner or operator of a new or reconstructed major affected source that has an initial startup after the effective date of a relevant standard under this part and for which an application for approval of construction or reconstruction is required under § 63.5(d) shall provide the following information in writing to the Administrator:

(i) A notification of intention to construct a new major affected source, reconstruct a major affected source, or reconstruct a major source such that the source becomes a major affected source with the application for approval of construction or reconstruction as specified in § 63.5(d)(1)(i);

(ii) A notification of the date when construction or reconstruction was commenced, submitted simultaneously with the application for approval of construction or reconstruction, if construction or reconstruction was commenced before the effective date of the relevant standard;

(iii) A notification of the date when construction or reconstruction was commenced, delivered or postmarked not later than 30 days after such date, if construction or reconstruction was commenced after the effective date of the relevant standard;

(iv) A notification of the anticipated date of startup of the source, delivered or postmarked not more than 60 days nor less than 30 days before such date; and

(v) A notification of the actual date of startup of the source, delivered or postmarked within 15 calendar days after that date.

(5) After the effective date of any relevant standard established by the Administrator under this part, whether or not an approved permit program is effective in the State in which an affected source is (or would be) located, an owner or operator who intends to construct a new affected source or reconstruct an affected source subject to such standard, or reconstruct a source such that it becomes an affected source subject to such standard, shall notify the Administrator, in writing, of the intended construction or reconstruction. The notification shall be submitted as soon as practicable before the construction or reconstruction is planned to commence (but no sooner than the effective date of the relevant standard) if the construction or reconstruction commences after the effective date of a relevant standard promulgated in this part. The notification shall be submitted as soon as practicable before startup but no later than 60 days after the effective date of a relevant standard promulgated in this part if the construction or reconstruction had commenced and initial startup had not occurred before the standard's effective date. The notification shall include all the information required for an application for approval of construction or reconstruction as specified in § 63.5(d). For major sources,

the application for approval of construction or reconstruction may be used to fulfill the requirements of this paragraph.

(c) *Request for extension of compliance.* If the owner or operator of an affected source cannot comply with a relevant standard by the applicable compliance date for that source, or if the owner or operator has installed BACT or technology to meet LAER consistent with § 63.6(i)(5) of this subpart, he/she may submit to the Administrator (or the State with an approved permit program) a request for an extension of compliance as specified in § 63.6(i)(4) through § 63.6(i)(6).

(d) *Notification that source is subject to special compliance requirements.* An owner or operator of a new source that is subject to special compliance requirements as specified in § 63.6(b)(3) and § 63.6(b)(4) shall notify the Administrator of his/her compliance obligations not later than the notification dates established in paragraph (b) of this section for new sources that are not subject to the special provisions.

(e) *Notification of performance test.* The owner or operator of an affected source shall notify the Administrator in writing of his or her intention to conduct a performance test at least 60 calendar days before the performance test is scheduled to begin to allow the Administrator to review and approve the site-specific test plan required under § 63.7(c), if requested by the Administrator, and to have an observer present during the test.

(f) *Notification of opacity and visible emission observations.* The owner or operator of an affected source shall notify the Administrator in writing of the anticipated date for conducting the opacity or visible emission observations specified in § 63.6(h)(5), if such observations are required for the source by a relevant standard. The notification shall be submitted with the notification of the performance test date, as specified in paragraph (e) of this section, or if no performance test is required or visibility or other conditions prevent the opacity or visible emission observations from being conducted concurrently with the initial performance test required under § 63.7, the

owner or operator shall deliver or postmark the notification not less than 30 days before the opacity or visible emission observations are scheduled to take place.

(g) *Additional notification requirements for sources with continuous monitoring systems.* The owner or operator of an affected source required to use a CMS by a relevant standard shall furnish the Administrator written notification as follows:

(1) A notification of the date the CMS performance evaluation under § 63.8(e) is scheduled to begin, submitted simultaneously with the notification of the performance test date required under § 63.7(b). If no performance test is required, or if the requirement to conduct a performance test has been waived for an affected source under § 63.7(h), the owner or operator shall notify the Administrator in writing of the date of the performance evaluation at least 60 calendar days before the evaluation is scheduled to begin;

(2) A notification that COMS data results will be used to determine compliance with the applicable opacity emission standard during a performance test required by § 63.7 in lieu of Method 9 or other opacity emissions test method data, as allowed by § 63.6(h)(7)(ii), if compliance with an opacity emission standard is required for the source by a relevant standard. The notification shall be submitted at least 60 calendar days before the performance test is scheduled to begin; and

(3) A notification that the criterion necessary to continue use of an alternative to relative accuracy testing, as provided by § 63.8(f)(6), has been exceeded. The notification shall be delivered or postmarked not later than 10 days after the occurrence of such exceedance, and it shall include a description of the nature and cause of the increased emissions.

(h) *Notification of compliance status.* (1) The requirements of paragraphs (h)(2) through (h)(4) of this section apply when an affected source becomes subject to a relevant standard.

(2)(i) Before a title V permit has been issued to the owner or operator of an affected source, and each time a notification of compliance status is required under this part, the owner or operator

of such source shall submit to the Administrator a notification of compliance status, signed by the responsible official who shall certify its accuracy, attesting to whether the source has complied with the relevant standard. The notification shall list—

(A) The methods that were used to determine compliance;

(B) The results of any performance tests, opacity or visible emission observations, continuous monitoring system (CMS) performance evaluations, and/or other monitoring procedures or methods that were conducted;

(C) The methods that will be used for determining continuing compliance, including a description of monitoring and reporting requirements and test methods;

(D) The type and quantity of hazardous air pollutants emitted by the source (or surrogate pollutants if specified in the relevant standard), reported in units and averaging times and in accordance with the test methods specified in the relevant standard;

(E) An analysis demonstrating whether the affected source is a major source or an area source (using the emissions data generated for this notification);

(F) A description of the air pollution control equipment (or method) for each emission point, including each control device (or method) for each hazardous air pollutant and the control efficiency (percent) for each control device (or method); and

(G) A statement by the owner or operator of the affected existing, new, or reconstructed source as to whether the source has complied with the relevant standard or other requirements.

(ii) The notification shall be sent before the close of business on the 60th day following the completion of the relevant compliance demonstration activity specified in the relevant standard (unless a different reporting period is specified in a relevant standard, in which case the letter shall be sent before the close of business on the day the report of the relevant testing or monitoring results is required to be delivered or postmarked). For example, the notification shall be sent before close of business on the 60th (or other required) day following completion of

the initial performance test and again before the close of business on the 60th (or other required) day following the completion of any subsequent required performance test. If no performance test is required but opacity or visible emission observations are required to demonstrate compliance with an opacity or visible emission standard under this part, the notification of compliance status shall be sent before close of business on the 30th day following the completion of opacity or visible emission observations.

(3) After a title V permit has been issued to the owner or operator of an affected source, the owner or operator of such source shall comply with all requirements for compliance status reports contained in the source's title V permit, including reports required under this part. After a title V permit has been issued to the owner or operator of an affected source, and each time a notification of compliance status is required under this part, the owner or operator of such source shall submit the notification of compliance status to the appropriate permitting authority following completion of the relevant compliance demonstration activity specified in the relevant standard.

(4) [Reserved]

(5) If an owner or operator of an affected source submits estimates or preliminary information in the application for approval of construction or reconstruction required in §63.5(d) in place of the actual emissions data or control efficiencies required in paragraphs (d)(1)(ii)(H) and (d)(2) of §63.5, the owner or operator shall submit the actual emissions data and other correct information as soon as available but no later than with the initial notification of compliance status required in this section.

(6) Advice on a notification of compliance status may be obtained from the Administrator.

(i) *Adjustment to time periods or postmark deadlines for submittal and review of required communications.* (1)(i) Until an adjustment of a time period or postmark deadline has been approved by the Administrator under paragraphs (i)(2) and (i)(3) of this section, the owner or operator of an affected source

remains strictly subject to the requirements of this part.

(ii) An owner or operator shall request the adjustment provided for in paragraphs (i)(2) and (i)(3) of this section each time he or she wishes to change an applicable time period or postmark deadline specified in this part.

(2) Notwithstanding time periods or postmark deadlines specified in this part for the submittal of information to the Administrator by an owner or operator, or the review of such information by the Administrator, such time periods or deadlines may be changed by mutual agreement between the owner or operator and the Administrator. An owner or operator who wishes to request a change in a time period or postmark deadline for a particular requirement shall request the adjustment in writing as soon as practicable before the subject activity is required to take place. The owner or operator shall include in the request whatever information he or she considers useful to convince the Administrator that an adjustment is warranted.

(3) If, in the Administrator's judgment, an owner or operator's request for an adjustment to a particular time period or postmark deadline is warranted, the Administrator will approve the adjustment. The Administrator will notify the owner or operator in writing of approval or disapproval of the request for an adjustment within 15 calendar days of receiving sufficient information to evaluate the request.

(4) If the Administrator is unable to meet a specified deadline, he or she will notify the owner or operator of any significant delay and inform the owner or operator of the amended schedule.

(j) *Change in information already provided.* Any change in the information already provided under this section shall be provided to the Administrator in writing within 15 calendar days after the change.

#### **§63.10 Recordkeeping and reporting requirements.**

(a) *Applicability and general information.* (1) The requirements of this section apply to owners or operators of affected sources who are subject to the

provisions of this part, unless specified otherwise in a relevant standard.

(2) For affected sources that have been granted an extension of compliance under subpart D of this part, the requirements of this section do not apply to those sources while they are operating under such compliance extensions.

(3) If any State requires a report that contains all the information required in a report listed in this section, an owner or operator may send the Administrator a copy of the report sent to the State to satisfy the requirements of this section for that report.

(4)(i) Before a State has been delegated the authority to implement and enforce recordkeeping and reporting requirements established under this part, the owner or operator of an affected source in such State subject to such requirements shall submit reports to the appropriate Regional Office of the EPA (to the attention of the Director of the Division indicated in the list of the EPA Regional Offices in §63.13).

(ii) After a State has been delegated the authority to implement and enforce recordkeeping and reporting requirements established under this part, the owner or operator of an affected source in such State subject to such requirements shall submit reports to the delegated State authority (which may be the same as the permitting authority). In addition, if the delegated (permitting) authority is the State, the owner or operator shall send a copy of each report submitted to the State to the appropriate Regional Office of the EPA, as specified in paragraph (a)(4)(i) of this section. The Regional Office may waive this requirement for any reports at its discretion.

(5) If an owner or operator of an affected source in a State with delegated authority is required to submit periodic reports under this part to the State, and if the State has an established timeline for the submission of periodic reports that is consistent with the reporting frequency(ies) specified for such source under this part, the owner or operator may change the dates by which periodic reports under this part shall be submitted (without changing the frequency of reporting) to be consistent with the State's schedule

by mutual agreement between the owner or operator and the State. For each relevant standard established pursuant to section 112 of the Act, the allowance in the previous sentence applies in each State beginning 1 year after the affected source's compliance date for that standard. Procedures governing the implementation of this provision are specified in §63.9(i).

(6) If an owner or operator supervises one or more stationary sources affected by more than one standard established pursuant to section 112 of the Act, he/she may arrange by mutual agreement between the owner or operator and the Administrator (or the State permitting authority) a common schedule on which periodic reports required for each source shall be submitted throughout the year. The allowance in the previous sentence applies in each State beginning 1 year after the latest compliance date for any relevant standard established pursuant to section 112 of the Act for any such affected source(s). Procedures governing the implementation of this provision are specified in §63.9(i).

(7) If an owner or operator supervises one or more stationary sources affected by standards established pursuant to section 112 of the Act (as amended November 15, 1990) and standards set under part 60, part 61, or both such parts of this chapter, he/she may arrange by mutual agreement between the owner or operator and the Administrator (or the State permitting authority) a common schedule on which periodic reports required by each relevant (i.e., applicable) standard shall be submitted throughout the year. The allowance in the previous sentence applies in each State beginning 1 year after the stationary source is required to be in compliance with the relevant section 112 standard, or 1 year after the stationary source is required to be in compliance with the applicable part 60 or part 61 standard, whichever is latest. Procedures governing the implementation of this provision are specified in §63.9(i).

(b) *General recordkeeping requirements.*

(1) The owner or operator of an affected source subject to the provisions of this

part shall maintain files of all information (including all reports and notifications) required by this part recorded in a form suitable and readily available for expeditious inspection and review. The files shall be retained for at least 5 years following the date of each occurrence, measurement, maintenance, corrective action, report, or record. At a minimum, the most recent 2 years of data shall be retained on site. The remaining 3 years of data may be retained off site. Such files may be maintained on microfilm, on a computer, on computer floppy disks, on magnetic tape disks, or on microfiche.

(2) The owner or operator of an affected source subject to the provisions of this part shall maintain relevant records for such source of—

(i) The occurrence and duration of each startup, shutdown, or malfunction of operation (i.e., process equipment);

(ii) The occurrence and duration of each malfunction of the air pollution control equipment;

(iii) All maintenance performed on the air pollution control equipment;

(iv) Actions taken during periods of startup, shutdown, and malfunction (including corrective actions to restore malfunctioning process and air pollution control equipment to its normal or usual manner of operation) when such actions are different from the procedures specified in the affected source's startup, shutdown, and malfunction plan (see § 63.6(e)(3));

(v) All information necessary to demonstrate conformance with the affected source's startup, shutdown, and malfunction plan (see § 63.6(e)(3)) when all actions taken during periods of startup, shutdown, and malfunction (including corrective actions to restore malfunctioning process and air pollution control equipment to its normal or usual manner of operation) are consistent with the procedures specified in such plan. (The information needed to demonstrate conformance with the startup, shutdown, and malfunction plan may be recorded using a "checklist," or some other effective form of recordkeeping, in order to minimize the recordkeeping burden for conforming events);

(vi) Each period during which a CMS is malfunctioning or inoperative (including out-of-control periods);

(vii) All required measurements needed to demonstrate compliance with a relevant standard (including, but not limited to, 15-minute averages of CMS data, raw performance testing measurements, and raw performance evaluation measurements, that support data that the source is required to report);

(viii) All results of performance tests, CMS performance evaluations, and opacity and visible emission observations;

(ix) All measurements as may be necessary to determine the conditions of performance tests and performance evaluations;

(x) All CMS calibration checks;

(xi) All adjustments and maintenance performed on CMS;

(xii) Any information demonstrating whether a source is meeting the requirements for a waiver of recordkeeping or reporting requirements under this part, if the source has been granted a waiver under paragraph (f) of this section;

(xiii) All emission levels relative to the criterion for obtaining permission to use an alternative to the relative accuracy test, if the source has been granted such permission under § 63.8(f)(6); and

(xiv) All documentation supporting initial notifications and notifications of compliance status under § 63.9.

(3) *Recordkeeping requirement for applicability determinations.* If an owner or operator determines that his or her stationary source that emits (or has the potential to emit, without considering controls) one or more hazardous air pollutants is not subject to a relevant standard or other requirement established under this part, the owner or operator shall keep a record of the applicability determination on site at the source for a period of 5 years after the determination, or until the source changes its operations to become an affected source, whichever comes first. The record of the applicability determination shall include an analysis (or other information) that demonstrates why the owner or operator believes the source is unaffected (e.g., because the

source is an area source). The analysis (or other information) shall be sufficiently detailed to allow the Administrator to make a finding about the source's applicability status with regard to the relevant standard or other requirement. If relevant, the analysis shall be performed in accordance with requirements established in subparts of this part for this purpose for particular categories of stationary sources. If relevant, the analysis should be performed in accordance with EPA guidance materials published to assist sources in making applicability determinations under section 112, if any.

(c) *Additional recordkeeping requirements for sources with continuous monitoring systems.* In addition to complying with the requirements specified in paragraphs (b)(1) and (b)(2) of this section, the owner or operator of an affected source required to install a CMS by a relevant standard shall maintain records for such source of—

(1) All required CMS measurements (including monitoring data recorded during unavoidable CMS breakdowns and out-of-control periods);

(2)–(4) [Reserved]

(5) The date and time identifying each period during which the CMS was inoperative except for zero (low-level) and high-level checks;

(6) The date and time identifying each period during which the CMS was out of control, as defined in § 63.8(c)(7);

(7) The specific identification (i.e., the date and time of commencement and completion) of each period of excess emissions and parameter monitoring exceedances, as defined in the relevant standard(s), that occurs during startups, shutdowns, and malfunctions of the affected source;

(8) The specific identification (i.e., the date and time of commencement and completion) of each time period of excess emissions and parameter monitoring exceedances, as defined in the relevant standard(s), that occurs during periods other than startups, shutdowns, and malfunctions of the affected source;

(9) [Reserved]

(10) The nature and cause of any malfunction (if known);

(11) The corrective action taken or preventive measures adopted;

(12) The nature of the repairs or adjustments to the CMS that was inoperative or out of control;

(13) The total process operating time during the reporting period; and

(14) All procedures that are part of a quality control program developed and implemented for CMS under § 63.8(d).

(15) In order to satisfy the requirements of paragraphs (c)(10) through (c)(12) of this section and to avoid duplicative recordkeeping efforts, the owner or operator may use the affected source's startup, shutdown, and malfunction plan or records kept to satisfy the recordkeeping requirements of the startup, shutdown, and malfunction plan specified in § 63.6(e), provided that such plan and records adequately address the requirements of paragraphs (c)(10) through (c)(12).

(d) *General reporting requirements.* (1) Notwithstanding the requirements in this paragraph or paragraph (e) of this section, the owner or operator of an affected source subject to reporting requirements under this part shall submit reports to the Administrator in accordance with the reporting requirements in the relevant standard(s).

(2) *Reporting results of performance tests.* Before a title V permit has been issued to the owner or operator of an affected source, the owner or operator shall report the results of any performance test under § 63.7 to the Administrator. After a title V permit has been issued to the owner or operator of an affected source, the owner or operator shall report the results of a required performance test to the appropriate permitting authority. The owner or operator of an affected source shall report the results of the performance test to the Administrator (or the State with an approved permit program) before the close of business on the 60th day following the completion of the performance test, unless specified otherwise in a relevant standard or as approved otherwise in writing by the Administrator. The results of the performance test shall be submitted as part of the notification of compliance status required under § 63.9(h).

(3) *Reporting results of opacity or visible emission observations.* The owner or operator of an affected source required to conduct opacity or visible emission

observations by a relevant standard shall report the opacity or visible emission results (produced using Test Method 9 or Test Method 22, or an alternative to these test methods) along with the results of the performance test required under § 63.7. If no performance test is required, or if visibility or other conditions prevent the opacity or visible emission observations from being conducted concurrently with the performance test required under § 63.7, the owner or operator shall report the opacity or visible emission results before the close of business on the 30th day following the completion of the opacity or visible emission observations.

(4) *Progress reports.* The owner or operator of an affected source who is required to submit progress reports as a condition of receiving an extension of compliance under § 63.6(i) shall submit such reports to the Administrator (or the State with an approved permit program) by the dates specified in the written extension of compliance.

(5)(i) *Periodic startup, shutdown, and malfunction reports.* If actions taken by an owner or operator during a startup, shutdown, or malfunction of an affected source (including actions taken to correct a malfunction) are consistent with the procedures specified in the source's startup, shutdown, and malfunction plan [see § 63.6(e)(3)], the owner or operator shall state such information in a startup, shutdown, and malfunction report. Reports shall only be required if a startup, shutdown, or malfunction occurred during the reporting period. The startup, shutdown, and malfunction report shall consist of a letter, containing the name, title, and signature of the owner or operator or other responsible official who is certifying its accuracy, that shall be submitted to the Administrator semiannually (or on a more frequent basis if specified otherwise in a relevant standard or as established otherwise by the permitting authority in the source's title V permit). The startup, shutdown, and malfunction report shall be delivered or postmarked by the 30th day following the end of each calendar half (or other calendar reporting period, as appropriate). If the owner or operator is required to submit excess emissions

and continuous monitoring system performance (or other periodic) reports under this part, the startup, shutdown, and malfunction reports required under this paragraph may be submitted simultaneously with the excess emissions and continuous monitoring system performance (or other) reports. If startup, shutdown, and malfunction reports are submitted with excess emissions and continuous monitoring system performance (or other periodic) reports, and the owner or operator receives approval to reduce the frequency of reporting for the latter under paragraph (e) of this section, the frequency of reporting for the startup, shutdown, and malfunction reports also may be reduced if the Administrator does not object to the intended change. The procedures to implement the allowance in the preceding sentence shall be the same as the procedures specified in paragraph (e)(3) of this section.

(ii) *Immediate startup, shutdown, and malfunction reports.* Notwithstanding the allowance to reduce the frequency of reporting for periodic startup, shutdown, and malfunction reports under paragraph (d)(5)(i) of this section, any time an action taken by an owner or operator during a startup, shutdown, or malfunction (including actions taken to correct a malfunction) is not consistent with the procedures specified in the affected source's startup, shutdown, and malfunction plan, the owner or operator shall report the actions taken for that event within 2 working days after commencing actions inconsistent with the plan followed by a letter within 7 working days after the end of the event. The immediate report required under this paragraph shall consist of a telephone call (or facsimile (FAX) transmission) to the Administrator within 2 working days after commencing actions inconsistent with the plan, and it shall be followed by a letter, delivered or postmarked within 7 working days after the end of the event, that contains the name, title, and signature of the owner or operator or other responsible official who is certifying its accuracy, explaining the circumstances of the event, the reasons for not following the startup, shutdown, and malfunction plan, and whether any excess emissions and/or

parameter monitoring exceedances are believed to have occurred. Notwithstanding the requirements of the previous sentence, after the effective date of an approved permit program in the State in which an affected source is located, the owner or operator may make alternative reporting arrangements, in advance, with the permitting authority in that State. Procedures governing the arrangement of alternative reporting requirements under this paragraph are specified in §63.9(i).

(e) *Additional reporting requirements for sources with continuous monitoring systems*—(1) *General.* When more than one CEMS is used to measure the emissions from one affected source (e.g., multiple breechings, multiple outlets), the owner or operator shall report the results as required for each CEMS.

(2) *Reporting results of continuous monitoring system performance evaluations.*

(i) The owner or operator of an affected source required to install a CMS by a relevant standard shall furnish the Administrator a copy of a written report of the results of the CMS performance evaluation, as required under §63.8(e), simultaneously with the results of the performance test required under §63.7, unless otherwise specified in the relevant standard.

(ii) The owner or operator of an affected source using a COMS to determine opacity compliance during any performance test required under §63.7 and described in §63.6(d)(6) shall furnish the Administrator two or, upon request, three copies of a written report of the results of the COMS performance evaluation conducted under §63.8(e). The copies shall be furnished at least 15 calendar days before the performance test required under §63.7 is conducted.

(3) *Excess emissions and continuous monitoring system performance report and summary report.* (i) Excess emissions and parameter monitoring exceedances are defined in relevant standards. The owner or operator of an affected source required to install a CMS by a relevant standard shall submit an excess emissions and continuous monitoring system performance report and/or a summary report to the Administrator semiannually, except when—

(A) More frequent reporting is specifically required by a relevant standard;

(B) The Administrator determines on a case-by-case basis that more frequent reporting is necessary to accurately assess the compliance status of the source; or

(C) The CMS data are to be used directly for compliance determination and the source experienced excess emissions, in which case quarterly reports shall be submitted. Once a source reports excess emissions, the source shall follow a quarterly reporting format until a request to reduce reporting frequency under paragraph (e)(3)(ii) of this section is approved.

(ii) *Request to reduce frequency of excess emissions and continuous monitoring system performance reports.* Notwithstanding the frequency of reporting requirements specified in paragraph (e)(3)(i) of this section, an owner or operator who is required by a relevant standard to submit excess emissions and continuous monitoring system performance (and summary) reports on a quarterly (or more frequent) basis may reduce the frequency of reporting for that standard to semiannual if the following conditions are met:

(A) For 1 full year (e.g., 4 quarterly or 12 monthly reporting periods) the affected source's excess emissions and continuous monitoring system performance reports continually demonstrate that the source is in compliance with the relevant standard;

(B) The owner or operator continues to comply with all recordkeeping and monitoring requirements specified in this subpart and the relevant standard; and

(C) The Administrator does not object to a reduced frequency of reporting for the affected source, as provided in paragraph (e)(3)(iii) of this section.

(iii) The frequency of reporting of excess emissions and continuous monitoring system performance (and summary) reports required to comply with a relevant standard may be reduced only after the owner or operator notifies the Administrator in writing of his or her intention to make such a change and the Administrator does not object to the intended change. In deciding

whether to approve a reduced frequency of reporting, the Administrator may review information concerning the source's entire previous performance history during the 5-year record-keeping period prior to the intended change, including performance test results, monitoring data, and evaluations of an owner or operator's conformance with operation and maintenance requirements. Such information may be used by the Administrator to make a judgment about the source's potential for noncompliance in the future. If the Administrator disapproves the owner or operator's request to reduce the frequency of reporting, the Administrator will notify the owner or operator in writing within 45 days after receiving notice of the owner or operator's intention. The notification from the Administrator to the owner or operator will specify the grounds on which the disapproval is based. In the absence of a notice of disapproval within 45 days, approval is automatically granted.

(iv) As soon as CMS data indicate that the source is not in compliance with any emission limitation or operating parameter specified in the relevant standard, the frequency of reporting shall revert to the frequency specified in the relevant standard, and the owner or operator shall submit an excess emissions and continuous monitoring system performance (and summary) report for the noncomplying emission points at the next appropriate reporting period following the noncomplying event. After demonstrating ongoing compliance with the relevant standard for another full year, the owner or operator may again request approval from the Administrator to reduce the frequency of reporting for that standard, as provided for in paragraphs (e)(3)(ii) and (e)(3)(iii) of this section.

(v) *Content and submittal dates for excess emissions and monitoring system performance reports.* All excess emissions and monitoring system performance reports and all summary reports, if required, shall be delivered or post-marked by the 30th day following the end of each calendar half or quarter, as appropriate. Written reports of excess emissions or exceedances of process or control system parameters shall in-

clude all the information required in paragraphs (c)(5) through (c)(13) of this section, in § 63.8(c)(7) and § 63.8(c)(8), and in the relevant standard, and they shall contain the name, title, and signature of the responsible official who is certifying the accuracy of the report. When no excess emissions or exceedances of a parameter have occurred, or a CMS has not been inoperative, out of control, repaired, or adjusted, such information shall be stated in the report.

(vi) *Summary report.* As required under paragraphs (e)(3)(vii) and (e)(3)(viii) of this section, one summary report shall be submitted for the hazardous air pollutants monitored at each affected source (unless the relevant standard specifies that more than one summary report is required, e.g., one summary report for each hazardous air pollutant monitored). The summary report shall be entitled "Summary Report—Gaseous and Opacity Excess Emission and Continuous Monitoring System Performance" and shall contain the following information:

(A) The company name and address of the affected source;

(B) An identification of each hazardous air pollutant monitored at the affected source;

(C) The beginning and ending dates of the reporting period;

(D) A brief description of the process units;

(E) The emission and operating parameter limitations specified in the relevant standard(s);

(F) The monitoring equipment manufacturer(s) and model number(s);

(G) The date of the latest CMS certification or audit;

(H) The total operating time of the affected source during the reporting period;

(I) An emission data summary (or similar summary if the owner or operator monitors control system parameters), including the total duration of excess emissions during the reporting period (recorded in minutes for opacity and hours for gases), the total duration of excess emissions expressed as a percent of the total source operating time during that reporting period, and a

breakdown of the total duration of excess emissions during the reporting period into those that are due to startup/shutdown, control equipment problems, process problems, other known causes, and other unknown causes;

(J) A CMS performance summary (or similar summary if the owner or operator monitors control system parameters), including the total CMS downtime during the reporting period (recorded in minutes for opacity and hours for gases), the total duration of CMS downtime expressed as a percent of the total source operating time during that reporting period, and a breakdown of the total CMS downtime during the reporting period into periods that are due to monitoring equipment malfunctions, nonmonitoring equipment malfunctions, quality assurance/quality control calibrations, other known causes, and other unknown causes;

(K) A description of any changes in CMS, processes, or controls since the last reporting period;

(L) The name, title, and signature of the responsible official who is certifying the accuracy of the report; and

(M) The date of the report.

(vii) If the total duration of excess emissions or process or control system parameter exceedances for the reporting period is less than 1 percent of the total operating time for the reporting period, and CMS downtime for the reporting period is less than 5 percent of the total operating time for the reporting period, only the summary report shall be submitted, and the full excess emissions and continuous monitoring system performance report need not be submitted unless required by the Administrator.

(viii) If the total duration of excess emissions or process or control system parameter exceedances for the reporting period is 1 percent or greater of the total operating time for the reporting period, or the total CMS downtime for the reporting period is 5 percent or greater of the total operating time for the reporting period, both the summary report and the excess emissions and continuous monitoring system performance report shall be submitted.

(4) *Reporting continuous opacity monitoring system data produced during a*

*performance test.* The owner or operator of an affected source required to use a COMS shall record the monitoring data produced during a performance test required under § 63.7 and shall furnish the Administrator a written report of the monitoring results. The report of COMS data shall be submitted simultaneously with the report of the performance test results required in paragraph (d)(2) of this section.

(f) *Waiver of recordkeeping or reporting requirements.* (1) Until a waiver of a recordkeeping or reporting requirement has been granted by the Administrator under this paragraph, the owner or operator of an affected source remains subject to the requirements of this section.

(2) Recordkeeping or reporting requirements may be waived upon written application to the Administrator if, in the Administrator's judgment, the affected source is achieving the relevant standard(s), or the source is operating under an extension of compliance, or the owner or operator has requested an extension of compliance and the Administrator is still considering that request.

(3) If an application for a waiver of recordkeeping or reporting is made, the application shall accompany the request for an extension of compliance under § 63.6(i), any required compliance progress report or compliance status report required under this part (such as under § 63.6(i) and § 63.9(h)) or in the source's title V permit, or an excess emissions and continuous monitoring system performance report required under paragraph (e) of this section, whichever is applicable. The application shall include whatever information the owner or operator considers useful to convince the Administrator that a waiver of recordkeeping or reporting is warranted.

(4) The Administrator will approve or deny a request for a waiver of recordkeeping or reporting requirements under this paragraph when he/she—

(i) Approves or denies an extension of compliance; or

(ii) Makes a determination of compliance following the submission of a required compliance status report or excess emissions and continuous monitoring systems performance report; or

(iii) Makes a determination of suitable progress towards compliance following the submission of a compliance progress report, whichever is applicable.

(5) A waiver of any recordkeeping or reporting requirement granted under this paragraph may be conditioned on other recordkeeping or reporting requirements deemed necessary by the Administrator.

(6) Approval of any waiver granted under this section shall not abrogate the Administrator's authority under the Act or in any way prohibit the Administrator from later canceling the waiver. The cancellation will be made only after notice is given to the owner or operator of the affected source.

#### § 63.11 Control device requirements.

(a) *Applicability.* This section contains requirements for control devices used to comply with provisions in relevant standards. These requirements apply only to affected sources covered by relevant standards referring directly or indirectly to this section.

(b) *Flares.* (1) Owners or operators using flares to comply with the provisions of this part shall monitor these control devices to assure that they are operated and maintained in conformance with their designs. Applicable subparts will provide provisions stating how owners or operators using flares shall monitor these control devices.

(2) Flares shall be steam-assisted, air-assisted, or non-assisted.

(3) Flares shall be operated at all times when emissions may be vented to them.

(4) Flares shall be designed for and operated with no visible emissions, except for periods not to exceed a total of 5 minutes during any 2 consecutive hours. Test Method 22 in appendix A of part 60 of this chapter shall be used to determine the compliance of flares with the visible emission provisions of this part. The observation period is 2 hours and shall be used according to Method 22.

(5) Flares shall be operated with a flame present at all times. The presence of a flare pilot flame shall be monitored using a thermocouple or any other equivalent device to detect the presence of a flame.

(6) Flares shall be used only with the net heating value of the gas being combusted at 11.2 MJ/scm (300 Btu/scf) or greater if the flare is steam-assisted or air-assisted; or with the net heating value of the gas being combusted at 7.45 MJ/scm (200 Btu/scf) or greater if the flare is non-assisted. The net heating value of the gas being combusted in a flare shall be calculated using the following equation:

$$H_T = K \sum_{i=1}^n C_i H_i$$

Where:

$H_T$ =Net heating value of the sample, MJ/scm; where the net enthalpy per mole of offgas is based on combustion at 25 °C and 760 mm Hg, but the standard temperature for determining the volume corresponding to one mole is 20 °C.

$K$ =Constant =

$$1.740 \times 10^{-7} \left( \frac{1}{\text{ppmv}} \right) \left( \frac{\text{g-mole}}{\text{scm}} \right) \left( \frac{\text{MJ}}{\text{kcal}} \right)$$

where the standard temperature for (g-mole/scm) is 20 °C.

$C_i$ =Concentration of sample component  $i$  in ppmv on a wet basis, as measured for organics by Test Method 18 and measured for hydrogen and carbon monoxide by American Society for Testing and Materials (ASTM) D1946-77 (incorporated by reference as specified in § 63.14).

$H_i$ =Net heat of combustion of sample component  $i$ , kcal/g-mole at 25 °C and 760 mm Hg. The heats of combustion may be determined using ASTM D2382-76 (incorporated by reference as specified in § 63.14) if published values are not available or cannot be calculated.

$n$ =Number of sample components.

(7)(i) Steam-assisted and nonassisted flares shall be designed for and operated with an exit velocity less than 18.3 m/sec (60 ft/sec), except as provided in paragraphs (b)(7)(ii) and (b)(7)(iii) of this section. The actual exit velocity of a flare shall be determined by dividing by the volumetric flow rate of gas being combusted (in units of emission standard temperature and pressure), as

determined by Test Method 2, 2A, 2C, or 2D in appendix A to 40 CFR part 60 of this chapter, as appropriate, by the unobstructed (free) cross-sectional area of the flare tip.

(ii) Steam-assisted and nonassisted flares designed for and operated with an exit velocity, as determined by the method specified in paragraph (b)(7)(i) of this section, equal to or greater than 18.3 m/sec (60 ft/sec) but less than 122 m/sec (400 ft/sec), are allowed if the net heating value of the gas being combusted is greater than 37.3 MJ/scm (1,000 Btu/scf).

(iii) Steam-assisted and nonassisted flares designed for and operated with an exit velocity, as determined by the method specified in paragraph (b)(7)(i) of this section, less than the velocity  $V_{\max}$ , as determined by the method specified in this paragraph, but less than 122 m/sec (400 ft/sec) are allowed. The maximum permitted velocity,  $V_{\max}$ , for flares complying with this paragraph shall be determined by the following equation:

$$\text{Log}_{10}(V_{\max})=(H_T+28.8)/31.7$$

Where:

$V_{\max}$ =Maximum permitted velocity, m/sec.

28.8=Constant.

31.7=Constant.

$H_T$ =The net heating value as determined in paragraph (b)(6) of this section.

(8) Air-assisted flares shall be designed and operated with an exit velocity less than the velocity  $V_{\max}$ . The maximum permitted velocity,  $V_{\max}$ , for air-assisted flares shall be determined by the following equation:

$$V_{\max}=8.706+0.7084(H_T)$$

Where:

$V_{\max}$ =Maximum permitted velocity, m/sec.

8.706=Constant.

0.7084=Constant.

$H_T$ =The net heating value as determined in paragraph (b)(6) of this section.

#### § 63.12 State authority and delegations.

(a) The provisions of this part shall not be construed in any manner to preclude any State or political subdivision thereof from—

(1) Adopting and enforcing any standard, limitation, prohibition, or other regulation applicable to an affected source subject to the requirements of this part, provided that such standard, limitation, prohibition, or regulation is not less stringent than any requirement applicable to such source established under this part;

(2) Requiring the owner or operator of an affected source to obtain permits, licenses, or approvals prior to initiating construction, reconstruction, modification, or operation of such source; or

(3) Requiring emission reductions in excess of those specified in subpart D of this part as a condition for granting the extension of compliance authorized by section 112(i)(5) of the Act.

(b)(1) Section 112(l) of the Act directs the Administrator to delegate to each State, when appropriate, the authority to implement and enforce standards and other requirements pursuant to section 112 for stationary sources located in that State. Because of the unique nature of radioactive material, delegation of authority to implement and enforce standards that control radionuclides may require separate approval.

(2) Subpart E of this part establishes procedures consistent with section 112(l) for the approval of State rules or programs to implement and enforce applicable Federal rules promulgated under the authority of section 112. Subpart E also establishes procedures for the review and withdrawal of section 112 implementation and enforcement authorities granted through a section 112(l) approval.

(c) All information required to be submitted to the EPA under this part also shall be submitted to the appropriate State agency of any State to which authority has been delegated under section 112(l) of the Act, provided that each specific delegation may exempt sources from a certain Federal or State reporting requirement. The Administrator may permit all or some of the information to be submitted to the appropriate State agency only, instead of to the EPA and the State agency.

**§ 63.13 Addresses of State air pollution control agencies and EPA Regional Offices.**

(a) All requests, reports, applications, submittals, and other communications to the Administrator pursuant to this part shall be submitted to the appropriate Regional Office of the U.S. Environmental Protection Agency indicated in the following list of EPA Regional Offices.

EPA Region I (Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont), Director, Air, Pesticides and Toxics Division, J.F.K. Federal Building, Boston, MA 02203-2211.

EPA Region II (New Jersey, New York, Puerto Rico, Virgin Islands), Director, Air and Waste Management Division, 26 Federal Plaza, New York, NY 10278.

EPA Region III (Delaware, District of Columbia, Maryland, Pennsylvania, Virginia, West Virginia), Director, Air, Radiation and Toxics Division, 841 Chestnut Street, Philadelphia, PA 19107.

EPA Region IV (Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee), Director, Air, Pesticides and Toxics, Management Division, 345 Courtland Street, NE., Atlanta, GA 30365.

EPA Region V (Illinois, Indiana, Michigan, Minnesota, Ohio, Wisconsin), Director, Air and Radiation Division, 77 West Jackson Blvd., Chicago, IL 60604-3507.

EPA Region VI (Arkansas, Louisiana, New Mexico, Oklahoma, Texas), Director, Air, Pesticides and Toxics, 1445 Ross Avenue, Dallas, TX 75202-2733.

EPA Region VII (Iowa, Kansas, Missouri, Nebraska), Director, Air and Toxics Division, 726 Minnesota Avenue, Kansas City, KS 66101.

EPA Region VIII (Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming), Director, Air and Toxics Division, 999 18th Street, 1 Denver Place, Suite 500, Denver, CO 80202-2405.

EPA Region IX (Arizona, California, Hawaii, Nevada, American Samoa, Guam), Director, Air and Toxics Division, 75 Hawthorne Street, San Francisco, CA 94105.

EPA Region X (Alaska, Idaho, Oregon, Washington), Director, Air and Toxics Division, 1200 Sixth Avenue, Seattle, WA 98101.

(b) All information required to be submitted to the Administrator under this part also shall be submitted to the appropriate State agency of any State to which authority has been delegated under section 112(l) of the Act. The owner or operator of an affected source may contact the appropriate EPA Regional Office for the mailing addresses

for those States whose delegation requests have been approved.

(c) If any State requires a submittal that contains all the information required in an application, notification, request, report, statement, or other communication required in this part, an owner or operator may send the appropriate Regional Office of the EPA a copy of that submittal to satisfy the requirements of this part for that communication.

**§ 63.14 Incorporations by reference.**

(a) The materials listed in this section are incorporated by reference in the corresponding sections noted. These incorporations by reference were approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. These materials are incorporated as they exist on the date of the approval, and notice of any change in these materials will be published in the FEDERAL REGISTER. The materials are available for purchase at the corresponding addresses noted below, and all are available for inspection at the Office of the Federal Register, 800 North Capitol Street, NW, suite 700, Washington, DC, at the Air and Radiation Docket and Information Center, U.S. EPA, 401 M Street, SW., Washington, DC, and at the EPA Library (MD-35), U.S. EPA, Research Triangle Park, North Carolina.

(b) The materials listed below are available for purchase from at least one of the following addresses: American Society for Testing and Materials (ASTM), 1916 Race Street, Philadelphia, Pennsylvania 19103; or University Microfilms International, 300 North Zeeb Road, Ann Arbor, Michigan 48106.

(1) ASTM D1946-77, Standard Method for Analysis of Reformed Gas by Gas Chromatography, IBR approved for § 63.11(b)(6).

(2) ASTM D2382-76, Heat of Combustion of Hydrocarbon Fuels by Bomb Calorimeter (High-Precision Method), IBR approved for § 63.11(b)(6).

(3) ASTM D2879-83, Standard Test Method for Vapor Pressure—Temperature Relationship and Initial Decomposition Temperature of Liquids by Isoteniscope, IBR approved for § 63.111 of subpart G of this part.

(4) ASTM D 3695-88, Standard Test Method for Volatile Alcohols in Water by Direct Aqueous-Injection Gas Chromatography, IBR approved for § 63.365(e)(1) of subpart O of this part.

(5) ASTM D 1193-77, Standard Specification for Reagent Water, IBR approved for Method 306, section 4.1.1 and section 4.4.2, of appendix A to part 63.

(6) ASTM D 1331-89, Standard Test Methods for Surface and Interfacial Tension of Solutions of Surface Active Agents, IBR approved for Method 306B, section 2.2, section 3.1, and section 4.2, of appendix A to part 63.

(7) ASTM E 260-91, Standard Practice for Packed Column Gas Chromatography, IBR approved for § 63.750(b)(2) of subpart GG of this part.

EDITORIAL NOTE: At 60 FR 64336, Dec. 15, 1995, in § 63.14, the following paragraphs (b)(4) through (b)(14) were added, although (b)(4) through (b)(7) already existed before this amendment.

(4) ASTM D523-89, Standard Test Method for Specular Gloss, IBR approved for § 63.782.

(5) ASTM D1475-90, Standard Test Method for Density of Paint, Varnish, Lacquer, and Related Products, IBR approved for § 63.788 appendix A.

(6) ASTM D2369-93, Standard Test Method for Volatile Content of Coatings, IBR approved for § 63.788 appendix A.

(7) ASTM D3912-80, Standard Test Method for Chemical Resistance of Coatings Used in Light-Water Nuclear Power Plants, IBR approved for § 63.782.

(8) ASTM D4017-90, Standard Test Method for Water and Paints and Paint Materials by Karl Fischer Method, IBR approved for § 63.788 appendix A.

(9) ASTM D4082-89, Standard Test Method for Effects of Gamma Radiation on Coatings for Use in Light-Water Nuclear Power Plants, IBR approved for § 63.782.

(10) ASTM D4256-89 [reapproved 1994], Standard Test Method for Determination of the Decontaminability of Coatings Used in Light-Water Nuclear Power Plants, IBR approved for § 63.782.

(11) ASTM D3792-91, Standard Test Method for Water Content of Water-Reducible Paints by Direct Injection into a Gas Chromatograph, IBR approved for § 63.788 appendix A.

(12) ASTM D3257-93, Standard Test Methods for Aromatics in Mineral Spirits by Gas Chromatography, IBR approved for § 63.786(b).

(13) ASTM E260-91, Standard Practice for Packed Column Gas Chromatography, IBR approved for § 63.786(b).

(14) ASTM E180-93, Standard Practice for Determining the Precision of ASTM Methods for Analysis and Testing of Industrial Chemicals, IBR approved for § 63.786(b).

(c) The materials listed below are available for purchase from the American Petroleum Institute (API), 1220 L Street, NW., Washington, DC 20005.

(1) API Publication 2517, *Evaporative Loss from External Floating-Roof Tanks*, Third Edition, February 1989, IBR approved for § 63.111 of subpart G of this part.

(2) API Publication 2518, *Evaporative Loss from Fixed-roof Tanks*, Second Edition, October 1991, IBR approved for § 63.150(g)(3)(i)(C) of subpart G of this part.

(d) *State and Local Requirements*. The materials listed below are available at the Air and Radiation Docket and Information Center, U.S. EPA, 401 M Street, SW., Washington, DC.

(1) *California Regulatory Requirements Applicable to the Air Toxics Program*, March 1, 1996, IBR approved for § 63.99(a)(5)(ii) of subpart E of this part.

(2) [Reserved]

[59 FR 12430, Mar. 16, 1994, as amended at 59 FR 19453, Apr. 22, 1994; 59 FR 62589, Dec. 6, 1994; 60 FR 4963, Jan. 25, 1995; 60 FR 33122, June 27, 1995; 60 FR 45980, Sept. 1, 1995; 61 FR 25399, May 21, 1996]

### § 63.15 Availability of information and confidentiality.

(a) *Availability of information*. (1) With the exception of information protected through part 2 of this chapter, all reports, records, and other information collected by the Administrator under this part are available to the public. In addition, a copy of each permit application, compliance plan (including the schedule of compliance), notification of compliance status, excess emissions and continuous monitoring systems performance report, and title V permit is available to the public, consistent with protections recognized in section 503(e) of the Act.

(2) The availability to the public of information provided to or otherwise obtained by the Administrator under this part shall be governed by part 2 of this chapter.

(b) *Confidentiality.* (1) If an owner or operator is required to submit information entitled to protection from disclosure under section 114(c) of the Act, the owner or operator may submit such information separately. The requirements of section 114(c) shall apply to such information.

(2) The contents of a title V permit shall not be entitled to protection under section 114(c) of the Act; however, information submitted as part of an application for a title V permit may be entitled to protection from disclosure.

### Subpart B—Requirements for Control Technology Determinations for Major Sources in Accordance With Clean Air Act Sections, Sections 112(g) and 112(j)

SOURCE: 59 FR 26449, May 20, 1994, unless otherwise noted.

#### §§ 63.40–63.49 [Reserved]

#### § 63.50 Applicability.

(a) *General applicability.* The requirements of §§ 63.50 through 63.56 implement section 112(j) of the Clean Air Act (as amended in 1990). The requirements of §§ 63.50 through 63.56 apply in each State beginning on the effective date of an approved title V permit program in such State. These requirements apply to the owner or operator of a major source of hazardous air pollutants which includes one or more stationary sources included in a source category or subcategory for which the Administrator has failed to promulgate an emission standard under this part by the section 112(j) deadline.

(b) *Relationship to State and local requirements.* Nothing in §§ 63.50 through 63.56 shall prevent a State or local regulatory agency from imposing more stringent requirements than those contained in these subsections.

(c) *Retention of State permit program approval.* In order to retain State per-

mit program approval, a State must, by the section 112(j) deadline for a source category, obtain sufficient legal authority to establish equivalent emission limitations, to incorporate those requirements into a title V permit, and to incorporate and enforce other requirements of section 112(j).

#### § 63.51 Definitions.

Terms used in §§ 63.50 through 63.56 of this subpart that are not defined below have the meaning given to them in the Act, in subpart A of this part.

*Available information* means, for purposes of conducting a MACT floor finding and identifying control technology options for emission units subject to the provisions of this subpart, information contained in the following information sources as of the section 112(j) deadline:

(1) A relevant proposed regulation, including all supporting information;

(2) Background information documents for a draft or proposed regulation;

(3) Any regulation, information or guidance collected by the Administrator establishing a MACT floor finding and/or MACT determination;

(4) Data and information available from the Control Technology Center developed pursuant to section 112(l)(3) of the Act, and

(5) Data and information contained in the Aerometric Informational Retrieval System (AIRS) including information in the MACT database, and

(6) Any additional information that can be expeditiously provided by the Administrator, and

(7) Any information provided by applicants in an application for a permit, permit modification, administrative amendment, or Notice of MACT Approval pursuant to the requirements of this subpart.

(8) Any additional relevant information provided by the applicant.

*Control technology* means measures, processes, methods, systems, or techniques to limit the emission of hazardous air pollutants including, but not limited to, measures which:

(1) Reduce the quantity, or eliminate emissions, of such pollutants through

process changes, substitution of materials or other modifications;

(2) Enclose systems or processes to eliminate emissions;

(3) Collect, capture, or treat such pollutants when released from a process, stack, storage or fugitive emissions point;

(4) Are design, equipment, work practice, or operational standards (including requirements for operator training or certification) as provided in 42 U.S.C. 7412(h); or

(5) Are a combination of paragraphs (1) through (4) of this definition.

*Emission point* means any part or activity of a major source that emits or has the potential to emit, under current operational design, any hazardous air pollutant.

*Emission unit* means any building, structure, facility, or installation. This could include an emission point or collection of emission points, within a major source, which the permitting authority determines is the appropriate entity for making a MACT determination under section 112(j), i.e., any of the following:

(1) An emission point that can be individually controlled.

(2) The smallest grouping of emission points, that, when collected together, can be commonly controlled by a single control device or work practice.

(3) Any grouping of emission points, that, when collected together, can be commonly controlled by a single control device or work practice.

(4) A grouping of emission points that are functionally related. Equipment is functionally related if the operation or action for which the equipment was specifically designed could not occur without being connected with or without relying on the operation of another piece of equipment.

(5) The entire geographical entity comprising a major source in a source category subject to a MACT determination under section 112(j).

*Enhanced review* means a review process containing all administrative steps needed to ensure that the terms and conditions resulting from the review process can be incorporated into the title V permit by an administrative amendment.

*Equivalent emission limitation* means an emission limitation, established under section 112(j) of the Act, which is at least as stringent as the MACT standard that EPA would have promulgated under section 112(d) or section 112(h) of the Act.

*Existing major source* means a major source, construction or reconstruction of which is commenced before EPA proposed a standard, applicable to the major source, under section 112 (d) or (h), or if no proposal was published, then on or before the section 112(j) deadline.

*Maximum achievable control technology (MACT) emission limitation for existing sources* means the emission limitation reflecting the maximum degree of reduction in emissions of hazardous air pollutants (including a prohibition on such emissions, where achievable) that the Administrator, taking into consideration the cost of achieving such emission reductions, and any non-air quality health and environmental impacts and energy requirements, determines is achievable by sources in the category or subcategory to which such emission standard applies. This limitation shall not be less stringent than the MACT floor.

*Maximum achievable control technology (MACT) emission limitation for new sources* means the emission limitation which is not less stringent than the emission limitation achieved in practice by the best controlled similar source, and which reflects the maximum degree of reduction in emissions of hazardous air pollutants (including a prohibition on such emissions, where achievable) that the Administrator, taking into consideration the cost of achieving such emission reduction, and any non-air quality health and environmental impacts and energy requirements, determines is achievable by sources in the category or subcategory to which such emission standard applies.

*Maximum Achievable Control Technology (MACT) floor* means:

(1) For existing sources:

(i) The average emission limitation achieved by the best performing 12 percent of the existing sources in the

United States (for which the Administrator has emissions information), excluding those sources that have, within 18 months before the emission standard is proposed or within 30 months before such standard is promulgated, whichever is later, first achieved a level of emission rate or emission reduction which complies, or would comply if the source is not subject to such standard, with the lowest achievable emission rate (as defined in section 171 of the Act) applicable to the source category and prevailing at the time, in the category or subcategory, for categories and subcategories of stationary sources with 30 or more sources; or

(ii) The average emission limitation achieved by the best performing five sources in the United States (for which the Administrator has or could reasonably obtain emissions information) in the category or subcategory, for a category or subcategory of stationary sources with fewer than 30 sources;

(2) For new sources, the emission limitation achieved in practice by the best controlled similar source.

*New emission unit* means an emission unit for which construction or reconstruction is commenced after the section 112(j) deadline, or after proposal of a relevant standard under section 112(d) or section 112(h) of the Clean Air Act (as amended in 1990), whichever comes first, except that, as provided by § 63.52(f)(1), an emission unit, at a major source, for which construction or reconstruction is commenced before the date upon which the area source becomes a major source, shall not be considered a new emission unit if, after the addition of such emission unit, the source is still an area source.

*New major source* means a major source for which construction or reconstruction is commenced after the section 112(j) deadline, or after proposal of a relevant standard under section 112(d) or section 112(h) of the Clean Air Act (as amended in 1990), whichever comes first.

*Permitting authority* means the permitting authority as defined in part 70 of this chapter.

*Section 112(j) deadline* means the date 18 months, after the date by which a relevant standard is scheduled to be promulgated under this part, except for

all major sources listed in the source category schedule for which a relevant standard is scheduled to be promulgated by November 15, 1994, the section 112(j) deadline is November 15, 1996.

*Similar source* means an emission unit that has comparable emissions and is structurally similar in design and capacity to other emission units such that the emission units could be controlled using the same control technology.

*Source category schedule for standards* means the schedule for promulgating MACT standards issued pursuant to section 112(e) of the Act.

*United States* means the United States, its possessions and territories.

[59 FR 26449, May 20, 1994, as amended at 61 FR 21372, May 10, 1996]

#### **§ 63.52 Approval process for new and existing emission units.**

(a) *Application.* (1) Except as provided in § 63.52(a)(3), if the Administrator fails to promulgate an emission standard under this part on or before an applicable section 112(j) deadline for a source category or subcategory, the owner or operator of an existing major source that includes one or more stationary sources in such category or subcategory, shall submit an application for a title V permit or application for a significant permit modification, whichever is applicable, by the section 112(j) deadline.

(2) If the Administrator fails to promulgate an emission standard under this part on or before an applicable section 112(j) deadline for a source category or subcategory, the owner or operator of a new emission unit in such source category or subcategory shall submit an application for a title V permit or application for a significant permit modification or administrative amendment, whichever is applicable, in accordance with procedures established under title V.

(3)(i) The owner or operator of an existing major source that already has a title V permit requiring compliance with a limit that would meet the requirements of section 112(j) of the Act, shall submit an application for an administrative permit amendment, by

the section 112(j) deadline, in accordance with procedures established under title V.

(ii) The owner or operator of a new emission unit that currently complies with a federally enforceable alternative emission limitation, or has a title V permit that already contains emission limitations substantively meeting the requirements of section 112(j), shall submit an application for an administrative permit amendment confirming compliance with the requirements of section 112(j), in accordance with procedures established under title V, and not later than the date 30 days after the date construction or reconstruction is commenced.

(4) In addition to meeting the requirements of § 63.52(a)(2), the owner or operator of a new emission unit may submit an application for a Notice of MACT Approval before construction, pursuant to § 63.54.

(b) *Permit review.* (1) Permit applications submitted under this paragraph will be reviewed and approved or disapproved according to procedures established under title V, and any other regulations approved under title V in the jurisdiction in which the emission unit is located. In the event that the permitting authority disapproves a permit application submitted under this paragraph or determines that the application is incomplete, the owner or operator shall revise and resubmit the application to meet the objections of the permitting authority not later than six months after first being notified that the application was disapproved or is incomplete.

(2) If the owner or operator has submitted a timely and complete application for a title V permit, significant permit modification, or administrative amendment required by this paragraph, any failure to have this permit will not be a violation of the requirements of this paragraph, unless the delay in final action is due to the failure of the applicant to submit, in a timely manner, information required or requested to process the application.

(c) *Emission limitation.* The permit or Notice of MACT Approval, whichever is applicable, shall contain an equivalent emission limitation (or limitations) for that category or subcategory deter-

mined on a case-by-case basis by the permitting authority, or, if the applicable criteria in subpart D of this part are met, the permit or Notice of MACT Approval may contain an alternative emission limitation. For the purposes of the preceding sentence, early reductions made pursuant to section 112(i)(5)(A) of the Act shall be achieved not later than the date on which the relevant standard should have been promulgated according to the source category schedule for standards.

(1) The permit or Notice will contain an emission standard or emission limitation to control the emissions of hazardous air pollutants. The MACT emission limitation will be determined by the permitting authority and will be based on the degree of emission reductions that can be achieved, if the control technologies or work practices are installed, maintained, and operated properly. Such emission limitation will be established consistent with the principles contained in § 63.55.

(2) The permit or Notice will specify any notification, operation and maintenance, performance testing, monitoring, reporting and recordkeeping requirements. The permit or Notice will include the following information:

(i) In addition to the MACT emission limitation required by paragraph (c)(1) of this section, additional emission limits, production limits, operational limits or other terms and conditions necessary to ensure federal enforceability of the MACT emission limitation;

(ii) Compliance certifications, testing, monitoring, reporting and recordkeeping requirements that are consistent with requirements established pursuant to title V, § 63.52(e), and, at the discretion of the permitting authority, to subpart A of this part;

(iii) A statement requiring the owner or operator to comply with all requirements contained in subpart A of this part deemed by the permitting authority to be applicable;

(iv) A compliance date(s) by which the owner or operator shall be in compliance with the MACT emission limitation, and all other applicable terms and conditions of the Notice.

(d)(1) *Compliance date.* The owner or operator of an existing major source

subject to the requirements of this paragraph shall comply with the emission limitation(s) established in the source's title V permit. In no case will such compliance date exceed 3 years after the issuance of the permit for that source, except where the permitting authority issues a permit that grants an additional year to comply in accordance with section 112(i)(3)(B), or unless otherwise specified in section 112(i), or in subpart D of this part.

(2) The owner or operator of a new emission unit subject to the requirements of this paragraph shall comply with a new source MACT level of control immediately upon issuance of the title V permit for the emission unit.

(e) *Enhanced monitoring.* In accordance with section 114(a)(3) of the Act, monitoring shall be capable of detecting deviations from each applicable emission limitation or other standard with sufficient reliability and timeliness to determine continuous compliance over the applicable reporting period. Such monitoring data may be used as a basis for enforcing emission limitations established under this subpart.

(f) *Area sources that become major sources.* (1) After the effective date of this subpart, the owner or operator of a new or existing area source that increases its emissions of, or its potential to emit, hazardous air pollutants such that the source becomes a major source that is subject to this subpart shall submit an application for a title V permit or application for a significant permit modification, or administrative amendment, whichever is applicable, by the date that such source becomes a major source.

(i) If an existing area source becomes a major source by the addition of an emission unit or as a result of reconstructing, that added emission unit or reconstructed emission unit shall comply with all requirements of this subpart that affect new emission units, including the compliance date for new emission units established in § 63.52(d).

(ii) If an area source, constructed after the section 112(j) deadline, becomes a major source solely by virtue of a relaxation in any federally enforceable emission limitation, established after the section 112(j) deadline,

on the capacity of an emission unit or units to emit a hazardous air pollutant, such as a restriction on hours of operation, then that emission unit or units shall comply with all requirements of this subpart that affect new emission units, on or before the date of such relaxation.

(2) After the effective date of this subpart, if the Administrator establishes a lesser quantity emission rate under section 112(a)(1) of the Act that results in an area source becoming a major source, then the owner or operator of such major source shall submit an application for a title V permit or application for a significant permit modification, or administrative amendment, whichever is applicable, on or before the date 6 months from the date that such source becomes a major source. If an existing area source becomes a major source as a result of the Administrator establishing a lesser quantity emission rate, then any emission unit, at that source, for which construction or reconstruction is commenced before the date upon which the source becomes major shall not be considered a new emission unit.

#### **§ 63.53 Application content for case-by-case MACT determinations.**

(a) *MACT Demonstration.* Except as provided by § 63.55(a)(3), an application for a MACT determination shall demonstrate how an emission unit will obtain the degree of emission reduction that the Administrator or the State has determined is at least as stringent as the emission reduction that would have been obtained had the relevant emission standard been promulgated according to the source category schedule for standards for the source category of which the emission unit is a member.

(b) *MACT Application.* The application for a MACT determination shall contain the following information:

(1) The name and address (physical location) of the major source;

(2) A brief description of the major source, its source category or categories, a description of the emission unit(s) requiring a MACT determination pursuant to other requirements in this subpart, and a description of whether the emission unit(s) require

new source MACT or existing source MACT based on the definitions established in § 63.51;

(3) For a new emission unit, the expected date of commencement of construction;

(4) For a new emission unit, the expected date of completion of construction;

(5) For a new emission unit, the anticipated date of startup of operation;

(6) The hazardous air pollutants emitted by each emission point, and an estimated emission rate for each hazardous air pollutant.

(7) Any existing federally enforceable emission limitations applicable to the emission point.

(8) The maximum and expected utilization of capacity of each emission point, and the associated uncontrolled emission rates for each emission point;

(9) The controlled emissions for each emission point in tons/year at expected and maximum utilization of capacity, and identification of control technology in place;

(10) Except as provided in § 63.55(a)(3), the MACT floor as specified by the Administrator or the permitting authority.

(11) Except as provided in § 63.55(a)(3), recommended emission limitations for the emission unit(s), and supporting information, consistent with § 63.52(c) and § 63.55(a).

(12) Except as provided in § 63.55(a)(3), a description of the control technologies that will apply to meet the emission limitations including technical information on the design, operation, size, estimated control efficiency, and any other information deemed appropriate by the permitting authority, and identification of the emission points to which the control technologies will be applied;

(13) Except as provided in § 63.55(a)(3), parameters to be monitored and frequency of monitoring to demonstrate continuous compliance with the MACT emission limitation over the applicable reporting period.

(14) Any other information required by the permitting authority including, at the discretion of the permitting authority, information required pursuant to subpart A of this part.

**§ 63.54 Preconstruction review procedures for new emission units.**

(a) *Review process for new emission units.* (1) If the permitting authority requires an owner or operator to obtain or revise a title V permit before construction of the new emission unit, or when the owner or operator chooses to obtain or revise a title V permit before construction, the owner or operator shall follow the administrative procedures established under title V before construction of the new emission unit.

(2) If an owner or operator is not required to obtain or revise a title V permit before construction of the new emission unit (and has not elected to do so), but the new emission unit is covered by any preconstruction or pre-operation review requirements established pursuant to section 112(g) of the Act, then the owner or operator shall comply with those requirements, in order to ensure that the requirements of section 112(j) and section 112(g) are satisfied. If the new emission unit is not covered by section 112(g), the permitting authority, in its discretion, may issue a Notice of MACT Approval, or the equivalent, in accordance with the procedures set forth in paragraphs (b) through (h) of this section, or an equivalent permit review process, before construction or operation of the new emission unit.

(3) Regardless of the review process, the MACT determination shall be consistent with the principles established in § 63.55. The application for a Notice of MACT Approval or a title V permit, permit modification, or administrative amendment, whichever is applicable, shall include the documentation required by § 63.53.

(b) *Optional administrative procedures for preconstruction or pre-operation review for new emission units.* The permitting authority may provide for an enhanced review of section 112(j) MACT determinations that provides for review procedures and compliance requirements equivalent to those set forth in paragraphs (b) through (h) of this section.

(1) The permitting authority will notify the owner or operator in writing as to whether the application for a MACT determination is complete or whether additional information is required.

(2) The permitting authority will approve an applicant's proposed control technology, or the permitting authority will notify the owner or operator in writing of its intention to disapprove a control technology.

(3) The owner or operator may present in writing, within a time frame specified by the permitting authority, additional information, considerations, or amendments to the application before the permitting authority's issuance of a final disapproval.

(4) The permitting authority will issue a preliminary approval or issue a disapproval of the application, taking into account additional information received from the owner or operator.

(5) A determination to disapprove any application will be in writing and will specify the grounds on which the disapproval is based.

(6) Approval of an applicant's proposed control technology will be set forth in a Notice of MACT Approval (or the equivalent) as described in §63.52(c).

(c) *Opportunity for public comment on Notice of MACT Approval.* The permitting authority will provide opportunity for public comment on the preliminary Notice of MACT Approval prior to issuance, including, at a minimum,

(1) Availability for public inspection in at least one location in the area affected of the information submitted by the owner or operator and of the permitting authority's tentative determination;

(2) A period for submittal of public comment of at least 30 days; and

(3) A notice by prominent advertisement in the area affected of the location of the source information and analysis specified in §63.52(c). The form and content of the notice will be substantially equivalent to that found in §70.7 of this chapter.

(4) An opportunity for a public hearing, if one is requested. The permitting authority will give at least 30 days notice in advance of any hearing.

(d) *Review by the EPA and Affected States.* The permitting authority will send copies of the preliminary notice (in time for comment) and final notice required by paragraph (c) of this section to the Administrator through the appropriate Regional Office, and to all

other State and local air pollution control agencies having jurisdiction in the region in which the new source would be located. The permitting authority will provide EPA with a review period for the final notice of at least 45 days, and will not issue a final Notice of MACT approval unless EPA objections are satisfied.

(e) *Effective date.* The effective date for new sources under this subsection shall be the date a Notice of MACT Approval is issued to the owner or operator of a new emission unit.

(f) *Compliance date.* New emission units shall comply with case-by-case MACT upon issuance of a title V permit for the emission unit.

(g) *Compliance with MACT Determinations.* An owner or operator of a major source that is subject to a MACT determination shall comply with notification, operation and maintenance, performance testing, monitoring, reporting, and recordkeeping requirements established under §63.52(e), under title V, and at the discretion of the permitting authority, under subpart A of this part. The permitting authority will provide the EPA with the opportunity to review compliance requirements for consistency with requirements established pursuant to title V during the review period under paragraph (d) of this section.

(h) *Equivalency under section 112(l).* If a permitting authority requires preconstruction review for new source MACT determinations under this subpart, such requirement shall not necessitate a determination under subpart E of this part.

**§63.55 Maximum achievable control technology (MACT) determinations for emission units subject to case-by-case determination of equivalent emission limitations.**

(a) *Requirements for emission units subject to case-by-case determination of equivalent emission limitations.* The owner or operator of a major source submitting an application pursuant to §63.52 or §63.54 shall include elements specified in §63.53, taking into consideration the following requirements:

(1) When the Administrator has proposed a relevant emission standard for the source category pursuant to section 112(d) or section 112(h) of the Act,

then the control technologies recommended by the owner or operator under § 63.53(b)(12), when applied to the emission points recommended by the applicant for control, shall be capable of achieving all emission limitations and requirements of the proposed standard unless the application contains information adequate to support a contention that:

(i) Different emissions limitations represent the maximum achievable control technology emission limitations for the source category, or

(ii) Requirements different from those proposed by EPA will be effective in ensuring that MACT emissions limitations are achieved.

(2) When the Administrator or the permitting authority has issued guidance or distributed information establishing a MACT floor finding for the source category or subcategory by the section 112(j) deadline, then the recommended MACT emission limitations required by § 63.53(b)(11) must be at least as stringent as the MACT floor, unless the application contains information adequately supporting an amendment to such MACT floor.

(3)(i) When neither the Administrator nor the permitting authority has issued guidance or distributed information establishing a MACT floor finding and MACT determination for a source category or subcategory by the section 112(j) deadline, then the owner or operator shall submit an application for a permit or application for a Notice of MACT Approval, whichever is applicable, containing the elements required by § 63.53(b) (1) through (9) and (14), by the section 112(j) deadline.

(ii) The owner or operator may recommend a control technology that either achieves a level of control at least as stringent as the emission control that is achieved in practice by the best controlled similar source, or obtains at least the maximum reduction in emissions of hazardous air pollutants that is achievable considering costs, non air quality health and environmental impacts, and energy requirements.

(4) The owner or operator may select a specific design, equipment, work practice, or operational standard, or combination thereof, when it is not feasible to prescribe or enforce an

equivalent emission limitation due to the nature of the process or pollutant. It is not feasible to prescribe or enforce a limitation when the Administrator determines that a hazardous air pollutant (HAP) or HAPs cannot be emitted through a conveyance designed and constructed to capture such pollutant, or that any requirement for, or use of, such a conveyance would be inconsistent with any Federal, State, or local law, or the application of measurement methodology to a particular class of sources is not practicable due to technological and economic limitations.

(b) *Requirements for permitting authorities.* The permitting authority will determine whether the permit application or application for a Notice of MACT Approval is approvable. If approvable, the permitting authority will establish hazardous air pollutant emissions limitations equivalent to the limitation that would apply if an emission standard had been issued in a timely manner under subsection 112 (d) or (h) of the Act. The permitting authority will establish these emissions limitations consistent with the following requirements and principles:

(1) Emission limitations will be established for all emission units within a source category or subcategory for which the section 112(j) deadline has passed.

(2) Each emission limitation for an existing emission unit will reflect the maximum degree of reduction in emissions of hazardous air pollutants (including a prohibition on such emission, where achievable) that the permitting authority, taking into consideration the cost of achieving such emission reduction and any non-air quality health and environmental impacts and energy requirements, determines is achievable by emission units in the category or subcategory for which the section 112(j) deadline has passed. This limitation will not be less stringent than the MACT floor, and will be based upon available information and information generated by the permitting authority before or during the application review process, including information provided in public comments.

(3) Each emission limitation for a new emission unit will not be less stringent than the emission limitation

achieved in practice by the best controlled similar source, and must reflect the maximum degree of reduction in emissions of hazardous air pollutants (including a prohibition on such emissions, where achievable) that the permitting authority, taking into consideration the cost of achieving such emission reduction, and any non-air quality health and environmental impacts and energy requirements, determines is achievable. This limitation will be based at a minimum upon available information and information provided in public comments.

(4) When the Administrator has proposed a relevant emissions standard for the source category pursuant to section 112(d) or section 112(h) of the Act, then the equivalent emission limitation established by the permitting authority shall ensure that all emission limitations and requirements of the proposed standard are achieved, unless the permitting authority determines based on additional information that:

(i) Different emissions limitations represent the maximum achievable control technology emission limitations for the source category; or

(ii) Requirements different from those proposed by EPA will be effective in ensuring that MACT emissions limitations are achieved.

(5) When the Administrator or the permitting authority has issued guidance or collected information establishing a MACT floor finding for the source category or subcategory, the equivalent emission limitation for an emission unit must be at least as stringent as that MACT floor finding unless, based on additional information, the permitting authority determines that the additional information adequately supports an amendment to the MACT floor. In that case, the equivalent emission limitation must be at least as stringent as the amended MACT floor.

(6) The permitting authority will select a specific design, equipment, work practice, or operational standard, or combination thereof, when it is not feasible to prescribe or enforce an equivalent emission limitation due to the nature of the process or pollutant. It is not feasible to prescribe or enforce a limitation when the Administrator determines that a hazardous air pollut-

ant (HAP) or HAPs cannot be emitted through a conveyance designed and constructed to capture such pollutant, or that any requirement for, or use of, such a conveyance would be inconsistent with any Federal, State, or local law, or the application of measurement methodology to a particular class of sources is not practicable due to technological and economic limitations.

(7) Nothing in this subpart will prevent a State or local permitting authority from establishing an emission limitation more stringent than required by Federal regulations.

(c) *Reporting to National Data Base.* The owner or operator shall submit additional copies of its application for a permit, permit modification, administrative amendment, or Notice of MACT Approval, whichever is applicable, to the EPA by the section 112(j) deadline for existing emission units, or by the date of the application for a permit or Notice of MACT Approval for new emission units.

**§63.56 Requirements for case-by-case determination of equivalent emission limitations after promulgation of a subsequent MACT standard.**

(a) If the Administrator promulgates an emission standard that is applicable to one or more emission units within a major source before the date a permit application under this paragraph is approved, the permit shall contain the promulgated standard rather than the emission limitation determined under §63.52, and the owner or operator shall comply with the promulgated standard by the compliance date in the promulgated standard.

(b) If the Administrator promulgates an emission standard under section 112 (d) or (h) of the Act that is applicable to a source after the date a permit is issued pursuant to §63.52 or §63.54, the permitting authority shall revise the permit upon its next renewal to reflect the promulgated standard. The permitting authority will establish a compliance date in the revised permit that assures that the owner or operator shall comply with the promulgated standard within a reasonable time, but not longer than 8 years after such standard is promulgated or 8 years after the date by which the owner or

operator was first required to comply with the emission limitation established by permit, whichever is earlier.

(c) Notwithstanding the requirements of paragraph (a) or (b) of this section, if the Administrator promulgates an emission standard that is applicable to a source after the date a permit application is approved under § 63.52 or § 63.54, the permitting authority is not required to change the emission limitation in the permit to reflect the promulgated standard if the level of control required by the emission limitation in the permit is at least as stringent as that required by the promulgated standard.

#### Subpart C—List of Hazardous Air Pollutants, Petitions Process, Lesser Quantity Designations, Source Category List

##### § 63.60 Deletion of caprolactam from the list of hazardous air pollutants.

The substance caprolactam (CAS number 105602) is deleted from the list of hazardous air pollutants established by 42 U.S.C. 7412(b)(1).

[61 FR 30823, June 18, 1996]

##### §§ 63.61–63.69 [Reserved]

#### Subpart D—Regulations Governing Compliance Extensions for Early Reductions of Hazardous Air Pollutants

##### § 63.70 Applicability.

The provisions of this subpart apply to an owner or operator of an existing source who wishes to obtain a compliance extension from a standard issued under section 112(d) of the Act. The provisions of this subpart also apply to a State or local agency acting pursuant to a permit program approved under title V of the Act. The Administrator will carry out the provisions of this subpart for any State that does not have an approved permit program.

##### § 63.71 Definitions.

All terms used in this subpart not defined in this section are given the same meaning as in the Act.

*Act* means the Clean Air Act as amended.

*Actual emissions* means the actual rate of emissions of a pollutant, but does not include excess emissions from a malfunction, or startups and shutdowns associated with a malfunction. Actual emissions shall be calculated using the source's actual operating rates, and types of materials processed, stored, or combusted during the selected time period.

*Artificially or substantially greater emissions* means abnormally high emissions such as could be caused by equipment malfunctions, accidents, unusually high production or operating rates compared to historical rates, or other unusual circumstances.

*EPA conditional method* means any method of sampling and analyzing for air pollutants that has been validated by the Administrator but that has not been published as an EPA Reference Method.

*EPA reference method* means any method of sampling and analyzing for an air pollutant as described in appendix A of part 60 of this chapter, appendix B of part 61 of this chapter, or appendix A of part 63.

*Equipment leaks* means leaks from pumps, compressors, pressure relief devices, sampling connection systems, open-ended valves or lines, valves, connectors, agitators, accumulator vessels, and instrumentation systems in hazardous air pollutant service.

*Existing source* means any source as defined in § 63.72, the construction or reconstruction of which commenced prior to proposal of an applicable section 112(d) standard.

*Hazardous air pollutant (HAP)* means any air pollutant listed pursuant to section 112(b) of the Act.

*High-risk pollutant* means a hazardous air pollutant listed in Table 1 of § 63.74.

*Malfunction* means any sudden failure of air pollution control equipment or process equipment or of a process to operate in a normal or usual manner. Failures that are caused entirely or in part by poor maintenance, careless operation, or any other preventable upset condition or preventable equipment breakdown shall not be considered malfunctions.

*Not feasible to prescribe or enforce a numerical emission limitation* means a situation in which the Administrator or a

State determines that a pollutant (or stream of pollutants) listed pursuant to section 112(b) of the Act cannot be emitted through a conveyance designed and constructed to emit or capture such pollutant, or that any requirement for, or use of, such a conveyance would be inconsistent with any Federal law; or the application of measurement technology to a particular source is not practicable due to technological or economic limitations.

*Permitting authority* means either a State agency with an approved permitting program under Title V of the Act or the Administrator in cases where the State does not have an approved permitting program.

*Post-reduction year* means the one year period beginning with the date early reductions have to be achieved to qualify for a compliance extension under subpart D of this part, unless a source has established with the permitting authority an earlier one year period as the post-reduction year. For most sources, the post-reduction year would begin with the date of proposal of the first section 112(d) standard applicable to the early reductions source; however, for sources that have made enforceable commitments, it would be the year from January 1, 1994, through December 31, 1994.

*Responsible official* means one of the following:

(1) For a corporation, a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy- or decision-making functions for the corporation; or a duly authorized representative of such person if the representative is responsible for the overall operation of one or more manufacturing, production, or operating facilities applying for or subject to a permit and either:

(i) The facilities employ more than 250 persons or have gross annual sales or expenditures exceeding \$25 million (in second quarter 1980 dollars); or

(ii) The delegation of authority to such representative is approved in advance by the permitting authority.

(2) For a partnership or sole proprietorship, a general partner or the proprietor, respectively.

(3) For a municipality, State, Federal, or other public agency, either a principal executive officer or ranking elected official. For the purposes of this part, a principal executive officer of a Federal agency includes the chief executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrators of EPA).

*Reviewing agency* means a State agency with an approved permitting program under Title V of the Act. An EPA Regional Office is the reviewing agency where the State does not have such an approved permitting program.

*State* means a State or local air pollution control agency.

[57 FR 61992, Dec. 29, 1992, as amended at 59 FR 59924, Nov. 21, 1994]

**§ 63.72 General provisions for compliance extensions.**

(a) Except as provided in paragraph (f) of this section, a permitting authority acting pursuant to a permitting program approved under Title V of the Act shall by permit allow an existing source to meet an alternative emission limitation in lieu of an emission limitation promulgated under section 112(d) of the Act for a period of 6 years from the compliance date of the otherwise applicable standard provided the source owner or operator demonstrates:

(1) According to the requirements of § 63.74 that the source has achieved a reduction of 90 percent (95 percent or more in the case of hazardous air pollutants which are particulates) in emissions of:

(i) Total hazardous air pollutants from the source;

(ii) Total hazardous air pollutants from the source as adjusted for high-risk pollutant weighting factors, if applicable.

(2) That such reduction was achieved before proposal of an applicable standard or, for sources eligible to qualify for an alternative emission limitation as specified in paragraph (c) of this section, before January 1, 1994.

(b) A source granted an alternative emission limitation shall comply with an applicable standard issued under section 112(d) of the Act immediately

upon expiration of the six year compliance extension period specified in paragraph (a) of this section.

(c) An existing source that achieves the reduction specified in paragraph (a)(1) of this section after proposal of an applicable section 112(d) standard but before January 1, 1994, may qualify for an alternative emission limitation under paragraph (a) of this section if the source makes an enforceable commitment, prior to proposal of the applicable standard, to achieve such reduction. The enforceable commitment shall be made according to the procedures and requirements of § 63.75.

(d) For each permit issued to a source under paragraph (a) of this section, there shall be established as part of the permit an enforceable alternative emission limitation for hazardous air pollutants reflecting the reduction which qualified the source for the alternative emission limitation.

(e) An alternative emission limitation shall not be available with respect to standards or requirements promulgated to provide an ample margin of safety to protect public health pursuant to section 112(f) of the Act, and the Administrator will, for the purpose of determining whether a standard under section 112(f) of the Act is necessary, review emissions from sources granted an alternative emission limitation under this subpart at the same time that other sources in the category or subcategory are reviewed.

(f) Nothing in this subpart shall preclude a State from requiring hazardous air pollutant reductions in excess of 90 percent (95 percent in the case of particulate hazardous air pollutants) as a condition of such State granting an alternative emission limitation authorized in paragraph (a) of this section.

#### § 63.73 Source.

(a) An alternative emission limitation may be granted under this subpart to an existing source. For the purposes of this subpart only, a source is defined as follows:

- (1) A building structure, facility, or installation identified as a source by the EPA in appendix B of this part;
- (2) All portions of an entire contiguous plant site under common owner-

ship or control that emit hazardous air pollutants;

(3) Any portion of an entire contiguous plant site under common ownership or control that emits hazardous air pollutants and can be identified as a facility, building, structure, or installation for the purposes of establishing standards under section 112(d) of the Act; or

(4) Any individual emission point or combination of emission points within a contiguous plant site under common control, provided that emission reduction from such point or aggregation of points constitutes a significant reduction of hazardous air pollutant emissions of the entire contiguous plant site.

(b) For purposes of paragraph (a)(4) of this section, emissions reductions are considered significant if they are made from base year emissions of not less than:

(1) A total of 10 tons per year of hazardous air pollutants where the total emissions of hazardous air pollutants in the base year from the entire contiguous plant site is greater than 25 tons per; or

(2) A total of 5 tons per year of hazardous air pollutants where the total emissions of hazardous air pollutants in the base year from the entire contiguous plant site is less than or equal to 25 tons per year.

#### § 63.74 Demonstration of early reduction.

(a) An owner or operator applying for an alternative emission limitation shall demonstrate achieving early reductions as required by § 63.72(a)(1) by following the procedures in this section.

(b) An owner or operator shall establish the source for the purposes of this subpart by documenting the following information:

(1) A description of the source including: a site plan of the entire contiguous plant site under common control which contains the source, markings on the site plan locating the parts of the site that constitute the source, and the activity at the source which causes hazardous air pollutant emissions;

(2) A complete list of all emission points of hazardous air pollutants in

the source, including identification numbers and short descriptive titles; and

(3) A statement showing that the source conforms to one of the allowable definition options from § 63.73. For a source conforming to the option in § 63.73(a)(4), the total base year emissions from the source, as determined pursuant to this section, shall be demonstrated to be at least:

(i) 5 tons per year, for cases in which total hazardous air pollutant emissions from the entire contiguous plant site under common control are 25 tons per year or less as calculated under paragraph (1) of this section; or

(ii) 10 tons per year in all other cases.

(c) An owner or operator shall establish base year emissions for the source by providing the following information:

(1) The base year chosen, where the base year shall be 1987 or later except that the base year may be 1985 or 1986 if the owner or operator of the source can demonstrate that emission data for the source for 1985 or 1986 was submitted to the Administrator pursuant to an information request issued under section 114 of the Act and was received by the Administrator prior to November 15, 1990;

(2) The best available data accounting for actual emissions, during the base year, of all hazardous air pollutants from each emission point listed in the source in paragraph (b)(2) of this section;

(3) The supporting basis for each emission number provided in paragraph (c)(2) of this section including:

(i) For test results submitted as the supporting basis, a description of the test protocol followed, any problems encountered during the testing, and a discussion of the validity of the method for measuring the subject emissions; and

(ii) For calculations based on emission factors, material balance, or engineering principles and submitted as the supporting basis, a step-by-step description of the calculations, including assumptions used and their bases, and a brief rationale for the validity of the calculation method used; and

(4) Evidence that the emissions provided under paragraph (c)(2) of this section are not artificially or substan-

tially greater than emissions in other years prior to implementation of emission reduction measures.

(d) An owner or operator shall establish post-reduction emissions by providing the following information:

(1) For the emission points listed in the source in paragraph (b)(2) of this section, a description of all control measures employed to achieve the emission reduction required by § 63.72(a)(1);

(2) The best available data accounting for actual emissions, during the year following the applicable emission reduction deadline as specified in § 63.72(a)(2), of all hazardous air pollutants from each emission point in the source listed pursuant to paragraph (b)(2) of this section.

(3) The supporting basis for each emission number provided in paragraph (d)(2) of this section including:

(i) For test results submitted as the supporting basis, a description of the test protocol followed, any problems encountered during the testing, and a discussion of the validity of the method for measuring the subject emissions; and

(ii) For calculations based on emission factors, material balance, or engineering principles and submitted as the supporting basis, a step-by-step description of the calculations, including assumptions used and their bases, and a brief rationale for the validity of the calculation method used;

(4) [Reserved]

(5) Evidence that there was no increase in radionuclide emissions from the source.

(e)(1) An owner or operator shall demonstrate that both total base year emissions and total base year emissions adjusted for high-risk pollutants, as applicable, have been reduced by at least 90 percent for gaseous hazardous air pollutants emitted and 95 percent for particulate hazardous air pollutants emitted by determining the following for gaseous and particulate emissions separately:

(i) Total base year emissions, calculated by summing all base year emission data from paragraph (c)(2) of this section;

(ii) Total post-reduction emissions, calculated by summing all post-reduction emission data from paragraph (d)(2) of this section;

(iii) (If applicable) Total base year emissions adjusted for high-risk pollutants, calculated by multiplying each emission number for a pollutant from paragraph (c)(2) of this section by the appropriate weighting factor for the pollutant from Table 1 in paragraph (f) of this section and then summing all weighted emission data;

(iv) (If applicable) Total post-reduction emissions adjusted for high-risk pollutants, calculated by multiplying each emission number for a pollutant from paragraph (d)(2) of this section by the appropriate weighting factor for the pollutant from Table 1 and then summing all weighted emission data; and

(v) Percent reductions, calculated by dividing the difference between base year and post-reduction emissions by the base year emissions. Separate demonstrations are required for total gaseous and particulate emissions, and total gaseous and particulate emissions adjusted for high-risk pollutants.

(2) If any points in the source emit both particulate and gaseous pollutants, as an alternative to the demonstration required in paragraph (e)(1) of this section, an owner or operator may demonstrate:

(i) A weighted average percent reduction for all points emitting both particulate and gaseous pollutants where the weighted average percent reduction is determined by

$$\%_w = \frac{0.9(\sum M_g) + 0.95(\sum M_p)}{\sum M_g + \sum M_p} \times 100$$

where %<sub>w</sub>=the required weighted percent reduction

ΣM<sub>g</sub>=the total mass rate (e.g., kg/yr) of all gaseous emissions

ΣM<sub>p</sub>=the total mass rate of all particulate emissions and,

(ii) The reductions required in paragraph (e)(1) of this section for all other points in the source.

(f) If lower rates or hours are used to achieve all or part of the emission reduction, any hazardous air pollutant

emissions that occur from a compensating increase in rates or hours from the same activity elsewhere within the plant site which contains the source shall be counted in the post-reduction emissions from the source. If emission reductions are achieved by shutting down process equipment and the shutdown equipment is restarted or replaced anywhere within the plant site, any hazardous air pollutant emissions from the restarted or replacement equipment shall be counted in the post-reduction emissions for the source.

TABLE 1—LIST OF HIGH-RISK POLLUTANTS

| CAS No. | Chemical                                       | Weighting factor |
|---------|--|------------------|
| 53963   | 2-Acetylaminofluorene                          | 100              |
| 107028  | Acrolein                                       | 100              |
| 79061   | Acrylamide                                     | 10               |
| 107131  | Acrylonitrile                                  | 10               |
| 0       | Arsenic compounds                              | 100              |
| 1332214 | Asbestos                                       | 100              |
| 71432   | Benzene  | 10               |
| 92875   | Benzidine                                      | 1000             |
| 0       | Beryllium compounds                            | 10               |
| 542881  | Bis(chloromethyl) ether                        | 1000             |
| 106990  | 1,3-Butadiene                                  | 10               |
| 0       | Cadmium compounds                              | 10               |
| 57749   | Chlordane                                      | 100              |
| 532274  | 2-Chloroacetophenone                           | 100              |
| 0       | Chromium compounds                             | 100              |
| 107302  | Chloromethyl methyl ether                      | 10               |
| 0       | Coke oven emissions                            | 10               |
| 334883  | Diazomethane                                   | 10               |
| 132649  | Dibenzofuran                                   | 10               |
| 96128   | 1,2-Dibromo-3-chloropropane                    | 10               |
| 111444  | Dichloroethyl ether (Bis(2-chloroethyl) ether) | 10               |
| 79447   | Dimethylcarbamoyl chloride                     | 100              |
| 122667  | 1,2-Diphenylhydrazine                          | 10               |
| 106934  | Ethylene dibromide                             | 10               |
| 151564  | Ethylenimine (Aziridine)                       | 100              |
| 75218   | Ethylene oxide                                 | 10               |
| 76448   | Heptachlor                                     | 100              |
| 118741  | Hexachlorobenzene                              | 100              |
| 77474   | Hexachlorocyclopentadiene                      | 10               |
| 302012  | Hydrazine                                      | 100              |
| 0       | Manganese compounds                            | 10               |
| 0       | Mercury compounds                              | 100              |
| 60344   | Methyl hydrazine                               | 10               |
| 624839  | Methyl isocyanate                              | 10               |
| 0       | Nickel compounds                               | 10               |
| 62759   | N-Nitrosodimethylamine                         | 100              |
| 684935  | N-Nitroso-N-methylurea                         | 1000             |
| 56382   | Parathion                                      | 10               |
| 75445   | Phosgene                                       | 10               |
| 7803512 | Phosphine                                      | 10               |
| 7723140 | Phosphorus                                     | 10               |
| 75558   | 1,2-Propylenimine                              | 100              |
| 1746016 | 2,3,7,8-Tetrachlorodibenzo-p-dioxin            | 100,000          |
| 8001352 | Toxaphene (chlorinated camphene)               | 100              |
| 75014   | Vinyl chloride                                 | 10               |

(g) The best available data representing actual emissions for the purpose of establishing base year or post-reduction emissions under this section shall consist of documented results from source tests using an EPA Reference Method, EPA Conditional Method, or the owner's or operator's source test method which has been validated pursuant to Method 301 of appendix A of this part. However, if one of the following conditions exists, an owner or operator may submit, in lieu of results from source tests, calculations based on engineering principles, emission factors, or material balance data as actual emission data for establishing base year or post-reduction emissions:

(1) No applicable EPA Reference Method, EPA Conditional Method, or other source test method exists;

(2) It is not technologically or economically feasible to perform source tests;

(3) It can be demonstrated to the satisfaction of the reviewing agency that the calculations will provide emission estimates of accuracy comparable to that of any applicable source test method;

(4) For base year emission estimates only, the base year conditions no longer exist at an emission point in the source and emission data could not be produced for such an emission point, by performing source tests under currently existing conditions and converting the test results to reflect base year conditions, that is more accurate than an estimate produced by using engineering principles, emission factors, or a material balance; or

(5) The emissions from one or a set of emission points in the source are small compared to total source emissions and potential errors in establishing emissions from such points will not have a significant effect on the accuracy of total emissions established for the source.

(h) For base year or post-reduction emissions established under this section that are not supported by source test data, the source owner or operator shall include the reason source testing was not performed.

(i) [Reserved]

(j) The EPA average emission factors for equipment leaks cannot be used

under this subpart to establish base year emissions for equipment leak sources, unless the base year emission number calculated using the EPA average emission factors for equipment leaks also is used as the post-reduction emission number for equipment leaks from the source.

(k) A source owner or operator shall not establish base year or post-reduction emissions that include any emissions from the source exceeding allowable emission levels specified in any applicable law, regulation, or permit condition.

(l) For sources subject to paragraph (b)(3)(i) of this section, an owner or operator shall document total base year emissions from an entire contiguous plant site under common control by providing the information required pursuant to paragraphs (b)(2), (c)(2), and (e)(1)(i) of this section for all hazardous air pollutants from all emission points in the contiguous plant site under common control.

(m) If a new pollutant is added to the list of hazardous air pollutants or high-risk pollutants, any source emitting such pollutant will not be required to revise an early reduction demonstration pursuant to this section if:

(1) Alternative emission limits have previously been specified by permit for the source as provided for in § 63.72(a); or

(2) The base year emissions submitted in an enforceable commitment have previously been approved by the reviewing agency.

[57 FR 61992, Dec. 29, 1992, as amended at 58 FR 62543, Nov. 29, 1993; 59 FR 53110, Oct. 21, 1994]

#### **§ 63.75 Enforceable commitments.**

(a) To make an enforceable commitment an owner or operator shall submit a commitment to achieve the early reductions required under § 63.72(a)(1) to the appropriate EPA Regional Office and a copy of the commitment to the appropriate State, except that the commitment shall be submitted to the State and a copy to the EPA Regional Office if the State has an approved permitting program under Title V of the Act. A copy shall also be submitted to both the EPA Stationary Source Compliance Division (EN-341W), 401 M

Street, SW., Washington, DC 20460 and the EPA Emission Standards Division (MD-13), Research Triangle Park, NC 27711; attention both to the Early Reductions Officer. The commitment shall contain:

(1) The name and address of the source;

(2) The name and telephone number of the source owner or operator or other responsible official who can be contacted concerning the commitment;

(3) An alternative mailing address if correspondence is to be directed to a location other than that given in paragraph (a)(1) of this section;

(4) All information specified in §63.74(b), (c) and (e)(1)(i), which defines and describes the source and establishes the base year hazardous air pollutant emissions from the source;

(5) The general plan for achieving the required hazardous air pollutant emissions reductions at the source including descriptions of emission control equipment to be employed, process changes or modifications to be made, and any other emission reduction measures to be used; and

(6) A statement of commitment, signed by a responsible official of the source, containing the following:

(i) A statement providing the post-reduction emission levels for total hazardous air pollutants and high-risk pollutants, as applicable, from the source on an annual basis which reflect a 90 percent (95 percent for particulate pollutants) reduction from base year emissions;

(ii) A statement certifying that the base year emission data submitted as part of the enforceable commitment constitute the best available data for base year emissions from the source, are correct to the best of the responsible official's knowledge, and are within allowable levels specified in any applicable law, regulation, or permit;

(iii) A statement that it is understood by the source owner or operator that submission of base year emissions constitutes a response to an EPA request under the authority of section 114 of the Act and that the commitment is subject to enforcement according to §63.80; and

(iv) A statement committing the source owner or operator to achieving

the emission levels, listed in paragraph (a)(6), (i) of this section, at the source before January 1, 1994.

(b) The following language may be used to satisfy the requirements of paragraphs (a)(6)(ii) through (a)(6)(iv) of this section:

I certify to the best of my knowledge that the base year emissions given above are correct and constitute the best available data for base year emissions from the source, and acknowledge that these estimates are being submitted in response to an EPA request under section 114 of the Act. I further certify that the base year emissions provided for all emission points in the source do not exceed allowable emission levels specified in any applicable law, regulation, or permit condition. I commit to achieve before January 1, 1994, the stated post-reduction emission level(s) at the source, which will provide the 90 (95) percent reduction required to qualify for the compliance extension, and acknowledge that this commitment is enforceable as specified in title 40, part 63, subpart D, of the Code of Federal Regulations.

(c) A commitment for a source shall be submitted prior to proposal of an applicable standard issued under section 112(d) of the Act. Commitments received after the proposal date shall be void.

(d) If test results for one or more emission points in a source are required to support base year emissions in an enforceable commitment but are not available prior to proposal of an applicable standard issued under section 112(d) of the Act, the test results may be submitted after the enforceable commitment is made but no later than 180 days after proposal of an applicable standard. In such cases, the enforceable commitment shall contain the best substitute emission data for the points in the source for which test results will be submitted later.

(e) An owner or operator may rescind such a commitment prior to December 1, 1993 without penalty and forfeit the opportunity to obtain a six year compliance extension under this subpart.

(f) An enforceable commitment submitted under this section shall not be in effect and enforceable until the base year emissions contained in the commitment have been approved according to the procedures in §63.76. An owner or operator is under no obligation to continue to seek approval of commitments

that have not been approved by December 1, 1993.

(g) The control measure information required under § 63.74(d)(1) as part of post-reduction emission documentation and submitted in a permit application according to the provisions of § 63.77 shall become part of an existing enforceable commitment upon receipt of the permit application by the permitting authority. An owner or operator shall notify the permitting authority of any change made to the source during calendar year 1994 which affects such control measure information and shall mail the notice within 5 days (postmark date) of making the change. The notice shall be considered an amendment to the source's enforceable commitment.

[57 FR 61992, Dec. 29, 1992, as amended at 58 FR 34370, June 25, 1993; 58 FR 62543, Nov. 29, 1993; 59 FR 59924, Nov. 21, 1994]

#### § 63.76 Review of base year emissions.

(a) Pursuant to the procedures of this section, the appropriate reviewing agency shall review and approve or disapprove base year emission data submitted in an enforceable commitment under § 63.75 or in a request letter from an applicant that wishes to participate in the early reduction program but who is not required to submit an enforceable commitment. For review requests submitted to a State agency as the appropriate reviewing agency, a copy of the request also shall be submitted to the applicable EPA Regional Office. For review requests submitted to the EPA Regional Office as the appropriate reviewing agency, a copy of the request also shall be sent to the applicable State agency. Copies also shall be submitted to the EPA Stationary Source Compliance Division (EN-341W), 401 M Street, SW., Washington, DC 20460 and the EPA Emission Standards Division (MD-13), Research Triangle Park, NC 27711; to the attention of the Early Reductions Officer.

(b) Within 30 days of receipt of an enforceable commitment or base year emission data, the reviewing agency shall advise the applicant that:

- (1) The base year emission data are complete as submitted; or
- (2) The base year emission data are not complete and include a list of defi-

ciencies that must be corrected before review can proceed.

(c) EPA will publish a notice in the FEDERAL REGISTER which contains a list, accumulated for the previous month, of the sources for which complete base year emission data have been submitted and which are undergoing review either in the EPA Regional Office or a State agency within the EPA region. The notice will contain the name and location of each source and a contract in the EPA Regional Office for additional information.

(d) Within 60 days of a determination that a base year emission data submission is complete, the reviewing agency shall evaluate the adequacy of the submission with respect to the requirements of § 63.74 (b) and (c) and either:

(1) Determine to approve the submission and publish a notice in a newspaper of general circulation in the area where the source is located or in a State publication designed to give general public notice, providing the aggregate base year emission data for the source and the rationale for the proposed approval, noting the availability of the nonconfidential information contained in the submission for public inspection in at least one location in the community in which the source is located, providing for a public hearing upon request by an interested party, and establishing a 30 day public comment period that can be extended to 60 days upon request by an interested party; or

(2) Determine to disapprove the base year emission data and give notice to the applicant of the reasons for the disapproval. An applicant may correct disapproved base year data and submit revised data for review in accordance with this subsection, except that the review of a revision shall be accomplished within 30 days.

(e) If no adverse public comments are received by the reviewing agency on proposed base year data for a source, the data shall be considered approved at the close of the public comment period and a notice of the approval shall be sent to the applicant and published by the reviewing agency by advertisement in the area affected.

(f) If adverse comments are received and the reviewing agency agrees that corrections are needed, the reviewing agency shall give notice to the applicant of the disapproval and reasons for the disapproval. An applicant may correct disapproved base year emission data and submit revised emission data. If a revision is submitted by the applicant that, to the satisfaction of the reviewing agency, takes into account the adverse comments, the reviewing agency will publish by advertisement in the area affected a notice containing the approved base year emission data for the source and send notice of the approval to the applicant.

(g) If adverse comments are received and the reviewing agency determines that the comments do not warrant changes to the base year emission data, the reviewing agency will publish by advertisement in the area affected a notice containing the approved base year emission data for the source and the reasons for not accepting the adverse comments. A notice of the approval also shall be sent to the applicant.

(h) If an applicant submits revised emission data under paragraph (d)(2) or (f) of this section for a source subject to an enforceable commitment, the applicant also shall submit an amended enforceable commitment which takes into account the revised base year emissions.

(i) If revised base year emission data are not submitted or notice of intent to submit revised data is not provided to the permitting authority by an applicant within 90 days of receiving adverse comments or a notice of disapproved base year emission data for a source that is subject to an enforceable commitment, the enforceable commitment shall be considered withdrawn and a notice to that effect shall be sent by the reviewing agency to the applicant.

#### § 63.77 Application procedures.

(a) To apply for an alternative emission limitation under § 63.72, an owner or operator of the source shall file a permit application with the appropriate permitting authority.

(b) Except as provided in paragraph (e) of this section, the permit applica-

tion shall contain the information required by § 63.74, as applicable, and the additional information required for a complete permit application as specified by the applicable permit program established pursuant to title V of the Act.

(c) Permit applications under this section for sources not subject to enforceable commitments shall be submitted by the later of the following dates:

(1) 120 days after proposal of an otherwise applicable standard issued under section 112(d) of the Act; or

(2) 120 days after the date an applicable permit program is approved or established pursuant to title V of the Act.

(d) Permit applications for sources subject to enforceable commitments pursuant to § 63.75 shall be submitted no later than April 30, 1994.

(e) If the post-reduction year does not end at least one month before the permit application deadline under paragraph (c) of this section, the source may file the post-reduction emissions information required under § 63.74(d)(2), (d)(3), and (d)(5) later as a supplement to the original permit application. In such cases, this supplemental information shall be submitted to the permitting authority no later than one month after the end of the post-reduction year.

(f) If a source test will be the supporting basis for establishing post-reduction emissions for one or more emissions units in the early reductions source, the test results shall be submitted by the applicable deadline for submittal of a permit application as specified in paragraph (c) or (d) of this section.

(g) Review and disposition of permit applications submitted under this section will be accomplished according to the provisions of the applicable permit program established pursuant to title V of the Act.

[58 FR 62543, Nov. 29, 1993, as amended at 59 FR 59924, Nov. 21, 1994]

#### § 63.78 Early reduction demonstration evaluation.

(a) The permitting authority will evaluate an early reduction demonstration submitted by the source owner or

operator in a permit application with respect to the requirements of § 63.74.

(b) An application for a compliance extension may be denied if, in the judgement of the permitting authority, the owner or operator has failed to demonstrate that the requirements of § 63.74 have been met. Specific reasons for denial include, but are not limited to:

(1) The information supplied by the owner or operator is incomplete;

(2) The required 90 percent reduction (95 percent in cases where the hazardous air pollutant is particulate matter) has not been demonstrated;

(3) The base year or post-reduction emissions are incorrect, based on methods or assumptions that are not valid, or not sufficiently reliable or well documented to determine with reasonable certainty that required reductions have been achieved; or

(4) The emission of hazardous air pollutants or the performance of emission control measures is unreliable so as to preclude determination that the required reductions have been achieved or will continue to be achieved during the extension period.

#### § 63.79 Approval of applications.

(a) If an early reduction demonstration is approved and other requirements for a complete permit application are met, the permitting authority shall establish by a permit issued pursuant to title V of the Act enforceable alternative emissions limitations for the source reflecting the reduction which qualified the source for the extension. However, if it is not feasible to prescribe a numerical emissions limitation for one or more emission points in the source, the permitting authority shall establish such other requirements, reflecting the reduction which qualified the source for an extension, in order to assure the source achieves the 90 percent or 95 percent reduction, as applicable.

(b) An alternative emissions limitation or other requirement prescribed pursuant to paragraph (a) of this section shall be effective and enforceable immediately upon issuance of the permit for the source and shall expire exactly six years after the compliance date of an otherwise applicable stand-

ard issued pursuant to section 112(d) of the Act.

#### § 63.80 Enforcement.

(a) All base year or post-reduction emissions information described in § 63.74 and required to be submitted as part of a permit application under § 63.77 or an enforceable commitment under § 63.75 shall be considered to have been requested by the Administrator under the authority of section 114 of the Act.

(b) Fraudulent statements contained in any base year or post-reduction emissions submitted to a State or EPA Regional Office under this subpart shall be considered violations of section 114 of the Act and of this subpart and, thus, actionable under section 113 of the Act and can be considered, in appropriate cases, violations of 18 U.S.C. 1001, the general false swearing provision of the United States Code.

(c) If a source subject to an enforceable commitment fails to achieve reductions before January 1, 1994, sufficient to qualify the source for an extension under this subpart, the source shall be considered to be in violation of the commitment and shall be subject to enforcement action under section 113 of the Act.

(d) If an early reduction demonstration in a permit application filed under § 63.77 is disapproved for a source not subject to an enforceable commitment, the owner or operator shall comply with an applicable standard issued under section 112(d) of the Act by the compliance date specified in such standard.

(e) If an early reduction demonstration in a permit application filed under § 63.77 is disapproved for a source that is subject to an enforceable commitment, the owner or operator shall comply with an applicable standard issued under section 112(d) of the Act by the compliance date specified in such standard and will be subject to enforcement action under section 113 of the Act.

(f) A violation of an alternative emission limitation or other requirement established by permit under § 63.79 (a) or (b) for the source is enforceable pursuant to the authority of section 113 of

the Act notwithstanding any demonstration of continuing 90 percent (95 percent for hazardous air pollutants which are particulates) emission reduction over the entire source.

**§ 63.81 Rules for special situations.**

(a) If more than one standard issued under section 112(d) of the Act would be applicable to a source as defined under § 63.73, then the date of proposal referred to in §§ 63.72(a)(2), 63.72(c), 63.74(d)(4), 63.75(c), and 63.77(c) is the date the first applicable standard is proposed.

(b) Sources emitting radionuclides are not required to reduce radionuclides by 90 (95) percent. Radionuclides may not be increased from the source as a result of the early reductions demonstration.

**Subpart E—Approval of State Programs and Delegation of Federal Authorities**

SOURCE: 58 FR 62283, Nov. 26, 1993, unless otherwise noted.

**§ 63.90 Program overview.**

The regulations in this subpart establish procedures consistent with section 112(l) of the Clean Air Act (Act) (42 U.S.C. 7401-7671q). This subpart establishes procedures for the approval of State rules or programs to be implemented and enforced in place of certain otherwise applicable section 112 Federal rules, emission standards or requirements (including section 112 rules promulgated under the authority of the Act prior to the 1990 Amendments to the Act). Authority to implement and enforce section 112 Federal rules as promulgated without changes may be delegated under procedures established in this subpart. This subpart also establishes procedures for the review and withdrawal of section 112 implementation and enforcement authorities delegated through this subpart.

(a) *Definitions.* The following definitions apply to this subpart.

*Applicability criteria* means the regulatory criteria used to define all emission points within all affected sources subject to a specific section 112 rule.

*Approval* means a determination by the Administrator that a State rule or

program meets the criteria of § 63.91 and the additional criteria of either § 63.92, § 63.93 or § 63.94, where appropriate. For accidental release prevention programs, the criteria of § 63.95 must also be met.

*Compliance and enforcement measures* means requirements within a rule or program relating to compliance and enforcement, including but not necessarily limited to monitoring, test methods and procedures, record-keeping, reporting, compliance certification, inspection, entry, sampling or accidental release prevention oversight.

*Level of control* means the degree to which a rule or program requires a source to limit emissions or to employ design, equipment, work practice, operational, accident prevention or other requirements or techniques (including a prohibition of emissions) for:

(1)(i) Each hazardous air pollutant, if individual pollutants are subject to emission limitations, and

(ii) The aggregate total of hazardous air pollutants, if the aggregate grouping is subject to emission limitations, provided that the rule or program would not lead to an increase in risk to human health or the environment; and

(2) Each substance regulated under section 112(r).

*Local agency* means a local air pollution control agency or, for the purposes of § 63.95, any local agency or entity having responsibility for preventing accidental releases which may occur at a source regulated under section 112(r).

*Program* means, for the purposes of an approval under § 63.94, a collection of State statutes, rules or other requirements which limits or will limit the emissions of hazardous air pollutants from affected sources.

*Stringent or stringency* means the degree of rigor, strictness or severity a statute, rule, emission standard or requirement imposes on an affected source as measured by the quantity of emissions, or as measured by parameters relating to rule applicability and level of control, or as otherwise determined by the Administrator.

(b) *Local agency coordination with state and territorial agencies.* Local agencies submitting a rule or program for

approval under this subpart shall consult with the relevant State or Territorial agency prior to making a request for approval to the Administrator. A State or Territorial agency may submit requests for approval on behalf of a local agency after consulting with that local agency.

(c) *Authorities retained by the Administrator.* (1) The following authorities will be retained by the Administrator and will not be delegated:

(i) The authority to add or delete pollutants from the list of hazardous air pollutants established under section 112(b);

(ii) The authority to add or delete substances from the list of substances established under section 112(r);

(iii) The authority to delete source categories from the Federal source category list established under section 112(c)(1) or to subcategorize categories on the Federal source category list after proposal of a relevant emission standard;

(iv) The authority to revise the source category schedule established under section 112(e) by moving a source category to a later date for promulgation; and

(v) Any other authorities determined to be nondelegable by the Administrator.

(2) Nothing in this subpart shall prohibit the Administrator from enforcing any applicable rule, emission standard or requirement established under section 112.

(3) Nothing in this subpart shall affect the authorities and obligations of the Administrator or the State under title V of the Act or under regulations promulgated pursuant to that title.

(d) *Federally-enforceable requirements.* All rules and requirements approved under this subpart and all resulting part 70 operating permit conditions are enforceable by the Administrator and citizens under the Act.

(e) *Standards not subject to modification or substitution.* With respect to radionuclide emissions from licensees of the Nuclear Regulatory Commission or licensees of Nuclear Regulatory Commission Agreement States which are subject to 40 CFR part 61, subpart I, T, or W, a State may request that the EPA approve delegation of implemen-

tation and enforcement of the Federal standard pursuant to § 63.91, but no changes or modifications in the form or content of the standard will be approved pursuant to § 63.92, § 63.93, or § 63.94.

**§ 63.91 Criteria common to all approval options.**

(a) *Approval process.* To obtain approval under this subpart of a rule or program that is different from the Federal rule, the criteria of this section and the criteria of either § 63.92, § 63.93 or § 63.94 must be met. For approval of State programs to implement and enforce Federal section 112 rules as promulgated without changes (except for accidental release programs), only the criteria of this section must be met. For approval of State rules or programs to implement and enforce the Federal accidental release prevention program as promulgated without changes, the requirements of this section and § 63.95 must be met. In the case of accidental release prevention programs which differ from the Federal accidental release prevention program, the requirements of this section, § 63.95, and either § 63.92 or § 63.93 must be met. For a State's initial request for approval, and except as otherwise specified under § 63.92, § 63.93, or § 63.94 for a State's subsequent requests for approval, the approval process will be the following.

(1) Upon receipt of a request for approval, the EPA will review the request for approval and notify the State within 30 days of receipt whether the request for approval is complete according to the criteria in this subpart. If a request for approval is found to be incomplete, the Administrator will so notify the State and will specify the deficient elements of the State's request.

(2) Within 45 days after receipt of a complete request for approval, the Administrator will seek public comment for a minimum of 30 days on the State request for approval. The Administrator will require that comments be submitted concurrently to the State.

(3) If, after review of public comments and any State responses to comments submitted to the Administrator within 30 days of the close of the public comment period, the Administrator

finds that the criteria of this section are met, the State rule or program will be approved by the Administrator under this section, published in the FEDERAL REGISTER, and incorporated directly or by reference, in the appropriate subpart of part 63. Authorities approved under § 63.95 will be incorporated pursuant to requirements under section 112(r).

(4) Within 180 days of receiving a complete request for approval, the Administrator will either approve or disapprove the State rule or program.

(5) If the Administrator finds that; any of the criteria of this section are not met, or any of the criteria of either § 63.92, § 63.93 or § 63.94 under which the request for approval was made are not met, the Administrator will disapprove the State rule or program. If a State rule or program is disapproved, the Administrator will notify the State of any revisions or additions necessary to obtain approval. Any resubmittal by a State of a request for approval will be considered a new request under this subpart.

(6) If the Administrator finds that; all of the criteria of this section are met; and all of the criteria of either § 63.92, § 63.93 or § 63.94 are met, the Administrator will approve the State rule or program and thereby delegate authority to implement and enforce the approved rule or program in lieu of the otherwise applicable Federal rules, emission standards or requirements. The approved State rule or program shall be Federally enforceable from the date of publication of approval. When a State rule or program is approved by the Administrator under this subpart, applicable part 70 permits shall be revised according to the provisions of § 70.7(f) of this chapter. Operating permit conditions resulting from any otherwise applicable Federal section 112 rules, emission standards or requirements will not be expressed in the State's part 70 permits or otherwise implemented or enforced by the State or by the EPA unless and until authority to enforce the approved State rule or program is withdrawn from the State under § 63.96. In the event approval is withdrawn under § 63.96, all otherwise applicable Federal rules and requirements shall be enforceable in

accordance with the compliance schedule established in the withdrawal notice and relevant part 70 permits shall be revised according to the provisions of § 70.7(f) of this chapter.

(b) *Criteria for approval.* Any request for approval under this subpart shall meet all section 112(l) approval criteria specified by the otherwise applicable Federal rule, emission standard or requirements and all of the approval criteria of this section. The State shall provide the Administrator with the following.

(1) A written finding by the State Attorney General (or for a local agency, the General Counsel with full authority to represent the local agency) that the State has the necessary legal authority to implement and to enforce the State rule or program upon approval and to assure compliance by all sources within the State with each applicable section 112 rule, emission standard or requirement. At a minimum, the State must have the following legal authorities concerning enforcement:

(i) The State shall have enforcement authorities that meet the requirements of § 70.11 of this chapter.

(ii) The State shall have authority to request information from regulated sources regarding their compliance status.

(iii) The State shall have authority to inspect sources and any records required to determine a source's compliance status.

(iv) If a State delegates authorities to a local agency, the State must retain enforcement authority unless the local agency has authorities that meet the requirements of § 70.11 of this chapter.

(2) A copy of State statutes, regulations and other requirements that contain the appropriate provisions granting authority to implement and enforce the State rule or program upon approval.

(3) A demonstration that the State has adequate resources to implement and enforce all aspects of the rule or program upon approval, which includes:

(i) A description in narrative form of the scope, structure, coverage and processes of the State program;

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(ii) A description of the organization and structure of the agency or agencies that will have responsibility for administering the program; and

(iii) A description of the agency staff who will carry out the State program, including the number, occupation, and general duties of the employees.

(4) A schedule demonstrating expeditious State implementation of the rule or program upon approval.

(5) A plan that assures expeditious compliance by all sources subject to the rule or program upon approval. The plan should include at a minimum a complete description of the State's compliance tracking and enforcement program, including but not limited to inspection strategies.

(6) A demonstration of adequate legal authority to assure compliance with the rule or program upon approval. At a minimum, the State must have the following legal authorities concerning enforcement:

(i) The State shall have enforcement authorities that meet the requirements of § 70.11 of this chapter.

(ii) If a State delegates authorities to a local agency, the State must retain enforcement authority unless the local agency has authorities that meet the requirements of § 70.11 of this chapter.

(c) *Revisions.* Within 90 days of any State amendment, repeal or revision of any State rule, program, or other authorities supporting an approval under this subpart, a State must provide the Administrator with a copy of the revised authorities and meet the requirements of either paragraph (c) (1) or (2) of this section.

(1)(i) The State shall provide the Administrator with a written finding by the State Attorney General (or for a local agency, the General Counsel with full authority to represent the local agency) that the State's revised legal authorities are adequate to continue to implement and to enforce all previously approved State rules and the approved State program (as applicable) and adequate to continue to assure compliance by all sources within the State with approved rules, the approved program (as applicable) and each applicable section 112 rule, emission standard or requirement.

(ii) If the Administrator determines that the written finding is not adequate, the State shall request approval of the revised rule or program according to the provisions of paragraph (c)(2) of this section.

(2) The State shall request approval under this subpart of a revised rule or program.

(i) If the Administrator approves the revised rule or program, the revised rule or program will replace a rule or program previously approved.

(ii) If the Administrator disapproves the revised rule or program, the Administrator will initiate procedures under § 63.96 to withdraw approval of any previously approved rule or program that may be affected by the revised authorities.

(iii) Until such time as the Administrator approves or withdraws approval of a revised rule or program, the previously approved rule or program remains Federally enforceable.

### **§ 63.92 Approval of a State rule that adjusts a section 112 rule.**

Under this section a State may seek approval of a State rule with specific adjustments to a Federal section 112 rule.

(a) *Approval process.* (1) If the Administrator finds that the criteria of this section and the criteria of § 63.91 are met, the State rule will be approved by the Administrator, published in the FEDERAL REGISTER and incorporated, directly or by reference, in the appropriate subpart of this part 63, without additional notice and opportunity for comment. Rules approved under § 63.95 will be incorporated pursuant to requirements under section 112(r).

(2) If the Administrator finds that any one of the State adjustments to the Federal rule is in any way ambiguous with respect to the stringency of applicability, the stringency of the level of control, or the stringency of the compliance and enforcement measures for any affected source or emission point, the Administrator will disapprove the State rule.

(3) Within 90 days of receiving a complete request for approval under this section, the Administrator will either approve or disapprove the State rule.

(b) *Criteria for approval.* Any request for approval under this section shall meet all of the criteria of this section and §63.91 before approval. The State shall provide the Administrator with:

(1) A demonstration that the public within the State has had adequate notice and opportunity to submit written comment on the State rule; and

(2) A demonstration that each State adjustment to the Federal rule individually results in requirements that:

(i) Are unequivocally no less stringent than the otherwise applicable Federal rule with respect to applicability;

(ii) Are unequivocally no less stringent than the otherwise applicable Federal rule with respect to level of control for each affected source and emission point;

(iii) Are unequivocally no less stringent than the otherwise applicable Federal rule with respect to compliance and enforcement measures for each affected source and emission point; and

(iv) Assure compliance by every affected source no later than would be required by the otherwise applicable Federal rule.

(3) State adjustments to Federal section 112 rules which may be part of an approved rule under this section are:

(i) Lowering a required emission rate or de minimis level;

(ii) Adding a design, work practice, operational standard, emission rate or other such requirement;

(iii) Increasing a required control efficiency;

(iv) Increasing the frequency of required reporting, testing, sampling or monitoring;

(v) Adding to the amount of information required for records or reports;

(vi) Decreasing the amount of time to come into compliance;

(vii) Subjecting additional emission points or sources within a source category to control requirements; and

(viii) Any adjustments allowed in a specific section 112 rule.

**§63.93 Approval of State authorities that substitute for a section 112 rule.**

Under this section a State may seek approval of State authorities which dif-

fer in form from a Federal section 112 rule for which they would substitute, such that the State authorities do not qualify for approval under §63.92.

(a) *Approval process.* (1) Within 45 days after receipt of a complete request for approval under this section, the Administrator will seek public comment for a minimum of 30 days on the State request for approval. The Administrator will require that comments be submitted concurrently to the State.

(2) If, after review of public comments and any State responses to comments submitted to the Administrator within 30 days of the close of the public comment period, the Administrator finds that the criteria of this section and the criteria of §63.91 are met, the State authorities will be approved by the Administrator under this section and the approved authorities will be published in the FEDERAL REGISTER and incorporated directly or by reference, in the appropriate subpart of part 63. Authorities approved under §63.95 will be incorporated pursuant to requirements under section 112(r).

(3) If the Administrator finds that any of the requirements of this section or §63.91 have not been met, the Administrator will disapprove the State authorities.

(4) Authorities submitted for approval under this section shall include either:

(i) State rules or other requirements enforceable under State law that would substitute for a section 112 rule; or

(ii)(A) The specific permit terms and conditions for the source or set of sources in the source category for which the State is requesting approval under this section, including control requirements and compliance and enforcement measures, that would substitute for the permit terms and conditions imposed by the otherwise applicable section 112 rule for such source or set of sources.

(B) The Administrator will approve authorities specified under paragraph (a)(4)(ii)(A) of this section only when the State submitting the request already has an approved program under §63.94, the Federal standard for the source category has been promulgated

under section 112(h), and the Administrator has not determined the work practice, design, equipment or operational requirements submitted by the State to be inadequate under the provisions of the Federal standard.

(5) Within 180 days of receiving a complete request for approval under this section, the Administrator will either approve or disapprove the State request.

(b) *Criteria for approval.* Any request for approval under this section shall meet all of the criteria of this section and § 63.91 before approval. The State shall provide the Administrator with detailed documentation that the State authorities contain or demonstrate:

(1) Applicability criteria that are no less stringent than those in the respective Federal rule;

(2) Levels of control and compliance and enforcement measures that result in emission reductions from each affected source or accidental release prevention program requirements for each affected source that are no less stringent than would result from the otherwise applicable Federal rule;

(3) A compliance schedule that assures that each affected source is in compliance no later than would be required by the otherwise applicable Federal rule; and

(4) At a minimum, the approved State authorities must include the following compliance and enforcement measures. (For authorities addressing the accidental release prevention program, minimum compliance and enforcement provisions are described in § 63.95.)

(i) The approved authorities must include a method for determining compliance.

(ii) If a standard in the approved authorities is not instantaneous, a maximum averaging time must be established.

(iii) The authorities must establish an obligation to periodically monitor or test for compliance using the method established per § 63.93(b)(4)(i) sufficient to yield reliable data that are representative of the source's compliance status.

(iv) The results of all required monitoring or testing must be reported at least every 6 months.

**§ 63.94 Approval of a State program that substitutes for section 112 emission standards.**

Under this section a State may seek approval of a State program to be implemented and enforced in lieu of specified existing and future Federal emission standards or requirements promulgated under sections 112(d), (f) or (h), for those affected sources permitted by the State under part 70 of this chapter.

(a) *Approval process.* (1) Within 45 days after receipt of a complete request for approval under this section the Administrator will seek public comment for a minimum of 30 days on the State request for approval. The Administrator will require that comments be submitted concurrently to the State.

(2) If, after review of all public comments, and State responses to comments submitted to the Administrator within 30 days of the close of the public comment period, the Administrator finds that the criteria of this section and the criteria of § 63.91 are met, the State program will be approved by the Administrator. The approved State commitment made under paragraph (b)(2) of this section and reference to all documents submitted under § 63.91(b)(2) will be published in the FEDERAL REGISTER and incorporated directly or by reference in the appropriate subpart of part 63.

(3) If the Administrator finds that any of the criteria of this section or § 63.91 have not been met, the Administrator will disapprove the State program.

(4) Within 180 days of receiving a complete request for approval under this section, the Administrator will either approve or disapprove the State request.

(b) *Criteria for approval.* Any request for approval under this section shall meet all of the criteria of this section and § 63.91 before approval. The State shall provide the Administrator with:

(1) A reference to all specific sources or source categories listed pursuant to subsection 112(c) for which the State is seeking authority to implement and enforce standards or requirements under this section;

(2) A legally binding commitment adopted through State law that, after approval:

(i) For each source subject to Federal section 112 emission standards or requirements for which approval is sought, part 70 permits shall be issued or revised by the State in accordance with procedures established in part 70 of this chapter and in accordance with the schedule submitted under § 63.91(b)(5) assuring expeditious compliance by all sources; and

(ii) All such issued or revised part 70 permits shall contain conditions that:

(A) Reflect applicability criteria no less stringent than those in the otherwise applicable Federal standards or requirements;

(B) Require levels of control for each affected source and emission point no less stringent than those contained in the otherwise applicable Federal standards or requirements;

(C) Require compliance and enforcement measures for each source and emission point no less stringent than those in the otherwise applicable Federal standards or requirements;

(D) Express levels of control and compliance and enforcement measures in the same form and units of measure as the otherwise applicable Federal standard or requirement;

(E) Assure compliance by each affected source no later than would be required by the otherwise applicable Federal standard or requirement.

**§ 63.95 Additional approval criteria for accidental release prevention programs.**

(a) A State submission for approval of an Accidental Release Prevention (ARP) program must meet the criteria and be in accordance with the procedures of this section, § 63.91, and, where appropriate, either § 63.92 or § 63.93.

(b) The State ARP program application shall contain the following elements consistent with the procedures in § 63.91 and, where appropriate, either § 63.92 or § 63.93:

(1) A demonstration of the State's authority and resources to implement and enforce regulations which are at least as stringent as regulations promulgated under section 112(r) that

specify substances, related thresholds and a risk management program,

(2) Procedures for:

(i) Registration of stationary sources, as defined in section 112(r)(2)(C) of the Act, which clearly identifies the State entity to receive the registration;

(ii) Receiving and reviewing risk management plans;

(iii) Making available to the public any risk management plan submitted to the State pursuant to provisions specified in section 112(r) which are consistent with section 114(c) of the Act; and

(iv) Providing technical assistance to subject sources, including small businesses;

(3) A demonstration of the State's authority to enforce all accidental release prevention requirements including a risk management plan auditing strategy;

(4) A description of the coordination mechanisms the State implementing agency will use with:

(i) The Chemical Safety and Hazard Investigation Board, particularly during accident investigation; and

(ii) The State Emergency Response Commission, and the Local Emergency Planning Committees; and

(iii) The air permitting program with respect to sources subject to both section 112(r) of the Act and permit requirements under part 70 of this chapter.

(c) A State may request approval for a complete or partial program. A partial accidental release prevention program must include the core program elements listed in paragraph (b) of this section.

**§ 63.96 Review and withdrawal of approval.**

(a) *Submission of information for review of approval.* (1) The Administrator may at any time request any of the following information to review the adequacy of implementation and enforcement of an approved rule or program and the State shall provide that information within 45 days of the Administrator's request:

(i) Copies of any State statutes, rules, regulations or other requirements that have amended, repealed or

revised the approved State rule or program since approval or since the immediately previous EPA review;

(ii) Information to demonstrate adequate State enforcement and compliance monitoring activities with respect to all approved State rules and with all section 112 rules, emission standards or requirements;

(iii) Information to demonstrate adequate funding, staff, and other resources to implement and enforce the State's approved rule or program;

(iv) A schedule for implementing the State's approved rule or program that assures compliance with all section 112 rules and requirements that the EPA has promulgated since approval or since the immediately previous EPA review,

(v) A list of part 70 or other permits issued, amended, revised, or revoked since approval or since immediately previous EPA review, for sources subject to a State rule or program approved under this subpart.

(vi) A summary of enforcement actions by the State regarding violations of section 112 requirements, including but not limited to administrative orders and judicial and administrative complaints and settlements.

(2) Upon request by the Administrator, the State shall demonstrate that each State rule, emission standard or requirement applied to an individual source is no less stringent as applied than the otherwise applicable Federal rule, emission standard or requirement.

(b) *Withdrawal of approval of a state rule or program.* (1) If the Administrator has reason to believe that a State is not adequately implementing or enforcing an approved rule or program according to the criteria of this section or that an approved rule or program is not as stringent as the otherwise applicable Federal rule, emission standard or requirements, the Administrator will so inform the State in writing and will identify the reasons why the Administrator believes that the State's rule or program is not adequate. The State shall then initiate action to correct the deficiencies identified by the Administrator and shall inform the Administrator of the actions it has initiated and completed. If the Adminis-

trator determines that the State's actions are not adequate to correct the deficiencies, the Administrator will notify the State that the Administrator intends to withdraw approval and will hold a public hearing and seek public comment on the proposed withdrawal of approval. The Administrator will require that comments be submitted concurrently to the State. Upon notification of the intent to withdraw, the State will notify all sources subject to the relevant approved rule or program that withdrawal proceedings have been initiated.

(2) Based on any public comment received and any response to that comment by the State, the Administrator will notify the State of any changes in identified deficiencies or actions needed to correct identified deficiencies. If the State does not correct the identified deficiencies within 90 days after receiving revised notice of deficiencies, the Administrator shall withdraw approval of the State's rule or program upon a determination that:

(i) The State no longer has adequate authorities to assure compliance or resources to implement and enforce the approved rule or program, or

(ii) The State is not adequately implementing or enforcing the approved rule or program, or

(iii) An approved rule or program is not as stringent as the otherwise applicable Federal rule, emission standard or requirement.

(3) The Administrator may withdraw approval for part of a rule, for a rule, for part of a program, or for an entire program.

(4) Any State rule, program or portion of a State rule or program for which approval is withdrawn is no longer Federally enforceable. The Federal rule, emission standard or requirement that would have been applicable in the absence of approval under this subpart will be the federally enforceable rule, emission standard or requirement.

(i) Upon withdrawal of approval, the Administrator will publish an expeditious schedule for sources subject to the previously approved State rule or program to come into compliance with applicable Federal requirements. Such schedule shall include interim emission

limits where appropriate. During this transition, sources must be operated in a manner consistent with good air pollution control practices for minimizing emissions.

(ii) Upon withdrawal, the State shall reopen, under the provisions of § 70.7(f) of this chapter, the part 70 permit of each source subject to the previously approved rules or programs in order to assure compliance through the permit with the applicable requirements for each source.

(iii) If the Administrator withdraws approval of State rules applicable to sources that are not subject to part 70 permits, the applicable State rules are no longer Federally enforceable.

(iv) If the Administrator withdraws approval of a portion of a State rule or program, other approved portions of the State rule or program that are not withdrawn shall remain in effect.

(v) Any applicable Federal emission standard or requirement shall remain enforceable by the EPA as specified in section 112(l)(7) of the Act.

(5) If a rule approved under § 63.93 is withdrawn under the provisions of § 63.96(b)(2) (i) or (ii), and, at the time of withdrawal, the Administrator finds the rule to be no less stringent than the otherwise applicable Federal requirement, the Administrator will grant equivalency to the previously approved State rule under the appropriate provisions of this part.

(6) A State may submit a new rule, program or portion of a rule or program for approval after the Administrator has withdrawn approval of the State's rule, program or portion of a rule or program. The Administrator will determine whether the new rule or program or portion of a rule or program is approvable according to the criteria and procedures of § 63.91 and either of § 63.92, § 63.93 or § 63.94.

(7) A State may voluntarily withdraw from an approved State rule, program or portion of a rule or program by notifying the EPA and all affected sources subject to the rule or program and providing notice and opportunity for comment to the public within the State.

(i) Upon voluntary withdrawal by a State, the Administrator will publish a timetable for sources subject to the previously approved State rule or pro-

gram to come into compliance with applicable Federal requirements.

(ii) Upon voluntary withdrawal, the State must reopen and revise the part 70 permits of all sources affected by the withdrawal as provided for in this section and § 70.7(f), and the Federal rule, emission standard, or requirement that would have been applicable in the absence of approval under this subpart will become the applicable requirement for the source.

(iii) Any applicable Federal section 112 rule, emission standard or requirement shall remain enforceable by the EPA as specified in section 112(l)(7) of the Act.

(iv) Voluntary withdrawal shall not be effective sooner than 180 days after the State notifies the EPA of its intent to voluntarily withdraw.

#### §§ 63.97–63.98 [Reserved]

#### § 63.99 Delegated Federal Authorities.

(a) This section lists the specific source categories that have been delegated to the air pollution control agencies in each State under the procedures described in this subpart.

(1)–(4) [Reserved]

(5) California

(i) [Reserved]

(ii) Affected sources must comply with the *California Regulatory Requirements Applicable to the Air Toxics Program*, March 1, 1996 (incorporated by reference as specified in § 63.14) as described below.

(A) The material incorporated in Chapter 1 of the *California Regulatory Requirements Applicable to the Air Toxics Program* pertains to the perchloroethylene dry cleaning source category, and has been approved under the procedures in § 63.93 to be implemented and enforced in place of Subpart M—National Perchloroethylene Air Emission Standards for Dry Cleaning Facilities, as it applies to area sources only, as defined in § 63.320(h).

(1) Authorities not delegated.

(i) California is not delegated the Administrator's authority to implement and enforce those provisions of subpart M which apply to major sources, as defined in § 63.320(g). Dry cleaning facilities which are major sources remain subject to subpart M.

(ii) California is not delegated the Administrator's authority of §63.325 to determine equivalency of emissions control technologies. Any source seeking permission to use an alternative means of emission limitation, under sections 93109(a)(17), 93109(g)(3)(A)(5), 93109(g)(3)(B)(2)(iii), and 93109(h) of the California Airborne Toxic Control Measure, must also receive approval from the Administrator before using such alternative means of emission limitation for the purpose of complying with section 112.

[61 FR 25399, May 21, 1996]

### Subpart F—National Emission Standards for Organic Hazardous Air Pollutants From the Synthetic Organic Chemical Manufacturing Industry

SOURCE: 59 FR 19454, Apr. 22, 1994, unless otherwise noted.

#### §63.100 Applicability and designation of source.

(a) This subpart provides applicability provisions, definitions, and other general provisions that are applicable to subparts G and H of this part.

(b) Except as provided in paragraphs (b)(4) and (c) of this section, the provisions of subparts F, G, and H of this part apply to chemical manufacturing process units that meet all the criteria specified in paragraphs (b)(1), (b)(2), and (b)(3) of this section:

(1) Manufacture as a primary product one or more of the chemicals listed in table 1 of this subpart;

(2) Use as a reactant or manufacture as a product, by-product, or co-product, one or more of the organic hazardous air pollutants listed in table 2 of this subpart; and

(3) Are located at a plant site that is a major source as defined in section 112(a) of the Act.

(4) The owner or operator of a chemical manufacturing processing unit is exempt from all requirements of subparts F, G, and H of this part until not later than April 22, 1997 if the owner or operator certifies, in a notification to the appropriate EPA Regional Office, not later than May 14, 1996, that the plant site at which the chemical manu-

facturing processing unit is located emits, and will continue to emit, during any 12-month period, less than 10 tons per year of any individual hazardous air pollutants (HAP), and less than 25 tons per year of any combination of HAP.

(i) If such a determination is based on limitations and conditions that are not federally enforceable (as defined in subpart A of this part), the owner or operator shall document the basis for the determination as specified in paragraphs (b)(4)(i)(A) through (b)(4)(i)(C) and comply with the recordkeeping requirement in 63.103(f).

(A) The owner or operator shall identify all HAP emission points at the plant site, including those emission points subject to and emission points not subject to subparts F, G, and H;

(B) The owner or operator shall calculate the amount of annual HAP emissions released from each emission point at the plant site, using acceptable measurement or estimating techniques for maximum expected operating conditions at the plant site. Examples of estimating procedures that are considered acceptable include the calculation procedures in §63.150 of subpart G, the early reduction demonstration procedures specified in §§63.74 (c)(2), (c)(3), (d)(2), (d)(3), and (g), or accepted engineering practices. If the total annual HAP emissions for the plant site are annually reported under Emergency Planning and Community Right-to-Know Act (EPCRA) section 313, then such reported annual emissions may be used to satisfy the requirements of §63.100(b)(4)(i)(B).

(C) The owner or operator shall sum the amount of annual HAP emissions from all emission points on the plant site. If the total emissions of any one HAP are less than 10 tons per year and the total emissions of any combination of HAP are less than 25 tons per year, the plant site qualifies for the exemption described in paragraph (b)(4) of this section, provided that emissions are kept below these thresholds.

(ii) If such a determination is based on limitations and conditions that are federally enforceable (as defined in subpart A of this part), the owner or operator is not subject to the provisions of paragraph (b)(4) of this section.

(c) The owner or operator of a chemical manufacturing process unit that meets the criteria specified in paragraphs (b)(1) and (b)(3) of this section but does not use as a reactant or manufacture as a product, by-product, or co-product any organic hazardous air pollutant listed in table 2 of this subpart shall comply only with the requirements of §63.103(e) of this subpart. To comply with this subpart, such chemical manufacturing process units shall not be required to comply with the provisions of subpart A of this part.

(d) The primary product of a chemical manufacturing process unit shall be determined according to the procedures specified in paragraphs (d)(1), (d)(2), and (d)(3) of this section.

(1) If a chemical manufacturing process unit produces more than one intended chemical product, the product with the greatest annual design capacity on a mass basis determines the primary product of the process.

(2) If a chemical manufacturing process unit has two or more products that have the same maximum annual design capacity on a mass basis and if one of those chemicals is listed in table 1 of this subpart, then the listed chemical is considered the primary product and the chemical manufacturing process unit is subject to this subpart. If more than one of the products is listed in table 1 of this subpart, then the owner or operator may designate as the primary product any of the listed chemicals and the chemical manufacturing process unit is subject to this subpart.

(3) For chemical manufacturing process units that are designed and operated as flexible operation units, the primary product shall be determined for existing sources based on the expected utilization for the five years following April 22, 1994, and for new sources based on the expected utilization for the first five years after initial start-up.

(i) If the predominant use of the flexible operation unit, as described in paragraphs (d)(3)(i)(A) and (d)(3)(i)(B) of this section, is to produce one or more chemicals listed in table 1 of this subpart, then the flexible operation unit shall be subject to the provisions of subparts F, G, and H of this part.

(A) If the flexible operation unit produces one product for the greatest annual operating time, then that product shall represent the primary product of the flexible operation unit.

(B) If the flexible operation unit produces multiple chemicals equally based on operating time, then the product with the greatest annual production on a mass basis shall represent the primary product of the flexible operation unit.

(ii) The determination of applicability of this subpart to chemical manufacturing process units that are designed and operated as flexible operation units shall be reported in the Implementation Plan required by §63.151 (c), (d), and (e) of subpart G of this part or as part of an operating permit application.

(e) The source to which this subpart applies is the collection of the process vents; storage vessels; transfer racks; wastewater and the associated treatment residuals; and pumps, compressors, agitators, pressure relief devices, sampling connection systems, open-ended valves or lines, valves, connectors, instrumentation systems, surge control vessels, and bottoms receivers that are associated with the chemical manufacturing process units that meet the criteria specified in paragraphs (b)(1) through (b)(3) of this section.

(1) Subparts F and G of this part apply to emissions from process vents, storage vessels, transfer racks, and wastewater streams and associated treatment residuals within a source that is subject to this subpart.

(2) Subparts F and H of this part apply to emissions from pumps, compressors, agitators, pressure relief devices, sampling connection systems, open-ended valves or lines, valves, connectors, instrumentation systems, surge control vessels, and bottoms receivers, within a source that is subject to this subpart.

(f) The source does not include the emission points listed in paragraphs (f)(1) through (f)(9) of this section. This subpart does not require emission points that are not included in the source to comply with the provisions of subpart A of this part.

(1) Process vents from batch operations;

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(2) Stormwater from segregated sewers;

(3) Water from fire-fighting and deluge systems in segregated sewers;

(4) Spills;

(5) Water from safety showers;

(6) Vessels storing organic liquids that contain organic hazardous air pollutants only as impurities;

(7) Loading racks, loading arms, or loading hoses that only transfer liquids containing organic hazardous air pollutants as impurities;

(8) Loading racks, loading arms, or loading hoses that vapor balance during all loading operations; and

(9) Equipment that is intended to operate in organic hazardous air pollutant service, as defined in §63.161 of subpart H of this part, for less than 300 hours during the calendar year.

(g) The owner or operator shall follow the procedures specified in paragraphs (g)(1) and (g)(2) of this section to determine whether a storage vessel is part of the source to which this subpart applies.

(1) Where a storage vessel is used exclusively by a chemical manufacturing process unit, the storage vessel shall be considered part of that chemical manufacturing process unit.

(i) If the chemical manufacturing process unit is subject to this subpart according to the criteria specified in paragraph (b) of this section, then the storage vessel is part of the source to which this subpart applies.

(ii) If the chemical manufacturing process unit is not subject to this subpart according to the criteria specified in paragraph (b) of this section, then the storage vessel is not part of the source to which this subpart applies.

(2) If a storage vessel is not dedicated to a single chemical manufacturing process unit, then the applicability of subparts F and G of this part shall be determined according to the provisions in paragraphs (g)(2)(i) through (g)(2)(iv) of this section.

(i) If a storage vessel is shared among chemical manufacturing process units and one of the process units has the predominant use, as determined by paragraph (g)(2)(i)(A) and (g)(2)(i)(B) of this section, then the storage vessel is part of that chemical manufacturing process unit.

(A) If the greatest input into the storage vessel is from a chemical manufacturing process unit that is located on the same plant site, then that chemical manufacturing process unit has the predominant use.

(B) If the greatest input into the storage vessel is provided from a chemical manufacturing process unit that is not located on the same plant site, then the predominant use is the chemical manufacturing process unit on the same plant site that receives the greatest amount of material from the storage vessel.

(ii) If a storage vessel is shared among chemical manufacturing process units so that there is no single predominant use, and at least one of those chemical manufacturing process units is subject to this subpart, the storage vessel shall be considered to be part of the chemical manufacturing process unit that is subject to this subpart. If more than one chemical manufacturing process unit is subject to this subpart, the owner or operator may assign the storage vessel to any of the chemical manufacturing process units subject to this subpart.

(iii) If the predominant use of a storage vessel varies from year to year, then the applicability of this subpart shall be determined based on the utilization that occurred during the year preceding April 22, 1994. This determination shall be reported in the Implementation Plan required by §63.151(c), (d), and (e) of subpart G of this part or as part of an operating permit application.

(iv) If there is a change in the material stored in the storage vessel, the owner or operator shall reevaluate the applicability of this subpart to the vessel.

(h) The owner or operator shall follow the procedures specified in paragraphs (h)(1) and (h)(2) of this section to determine whether the arms and hoses in a loading rack are part of the source to which this subpart applies.

(1) Where a loading rack is used exclusively by a chemical manufacturing process unit, the loading rack shall be considered part of that specific chemical manufacturing process unit.

(i) If the chemical manufacturing process unit is subject to this subpart

according to the criteria specified in paragraph (b) of this section and the loading rack does not meet the criteria specified in paragraphs (f)(7) and (f)(8) of this section, then the loading rack is considered a transfer rack (as defined in §63.101 of this subpart) and is part of the source to which this subpart applies.

(ii) If the chemical manufacturing process unit is not subject to this subpart according to the criteria specified in paragraph (b) of this section, then the loading rack is not considered a transfer rack (as defined in §63.101 of this subpart) and is not a part of the source to which this subpart applies.

(2) If a loading rack is shared among chemical manufacturing process units, then the applicability of subparts F and G of this part shall be determined at each loading arm or loading hose according to the provisions in paragraphs (h)(2)(i) through (h)(2)(v) of this section.

(i) Each loading arm or loading hose that is dedicated to the transfer of liquid organic hazardous air pollutants listed in table 2 of this subpart from a chemical manufacturing process unit to which this subpart applies is part of that chemical manufacturing process unit and is part of the source to which this subpart applies unless the loading arm or loading hose meets the criteria specified in paragraph (f)(7) or (f)(8) of this section.

(ii) If a loading arm or loading hose is shared among chemical manufacturing process units, and one of the chemical manufacturing process units provides the greatest amount of the material that is loaded by the loading arm or loading hose, then the loading arm or loading hose is part of that chemical manufacturing process unit.

(A) If the chemical manufacturing process unit is subject to this subpart according to the criteria specified in paragraph (b) of this section, then the loading arm or loading hose is part of the source to which this subpart applies unless the loading arm or loading hose meets the criteria specified in paragraph (f)(7) or (f)(8) of this section.

(B) If the chemical manufacturing process unit is not subject to this subpart according to the criteria specified in paragraph (b) of this section, then

the loading arm or loading hose is not part of the source to which this subpart applies.

(iii) If a loading arm or loading hose is shared among chemical manufacturing process units so that there is no single predominant use as described in paragraph (h)(2)(ii) of this section and at least one of those chemical manufacturing process units is subject to this subpart, then the loading arm or hose is part of the chemical manufacturing process unit that is subject to this subpart. If more than one of the chemical manufacturing process units is subject to this subpart, the owner or operator may assign the loading arm or loading hose to any of the chemical manufacturing process units subject to this subpart.

(iv) If the predominant use of a loading arm or loading hose varies from year to year, then the applicability of this subpart shall be determined based on the utilization that occurred during the year preceding April 22, 1994. This determination shall be reported in the Implementation Plan required by §63.151 (c), (d), and (e) of subpart G or as part of an operating permit application.

(v) If there is a change in the material loaded at the loading arm or loading hose, the owner or operator shall reevaluate the applicability of this subpart to the loading arm or loading hose.

(i) Except as provided in paragraph (i)(6) of this section, the owner or operator shall follow the procedures specified in paragraphs (i)(1) through (i)(5) of this section to determine whether the vent(s) from a distillation unit is part of the source to which this subpart applies.

(1) If the greatest input to the distillation unit is from a chemical manufacturing process unit located on the same plant site, then the distillation unit shall be assigned to that chemical manufacturing process unit.

(2) If the greatest input to the distillation unit is provided from a chemical manufacturing process unit that is not located on the same plant site, then the distillation unit shall be assigned to the chemical manufacturing process unit located at the same plant

site that receives the greatest amount of material from the distillation unit.

(3) If a distillation unit is shared among chemical manufacturing process units so that there is no single predominant use, as described in paragraphs (i)(1) and (i)(2) of this section, and at least one of those chemical manufacturing process units is subject to this subpart, the distillation unit shall be assigned to the chemical manufacturing process unit that is subject to this subpart. If more than one chemical manufacturing process unit is subject to this subpart, the owner or operator may assign the distillation unit to any of the chemical manufacturing process units subject to this rule.

(4) If the chemical manufacturing process unit to which the distillation unit is assigned is subject to this subpart and the vent stream contains greater than 0.005 weight percent total organic hazardous air pollutants, then the vent(s) from the distillation unit is considered a process vent (as defined in §63.101 of this subpart) and is part of the source to which this subpart applies.

(5) If the predominant use of a distillation unit varies from year to year, then the applicability of this subpart shall be determined based on the utilization that occurred during the year preceding April 22, 1994. This determination shall be included in the Implementation Plan required by §63.151 (c), (d), and (e) of subpart G of this part or as part of an operating permit application.

(6) If the distillation unit is part of one of the chemical manufacturing process units listed in paragraphs (i)(6)(i) through (i)(6)(iii) of this section and the vent stream contains greater than 0.005 weight percent total organic hazardous air pollutants, then the vents from the distillation unit are considered process vents (as defined in §63.101 of this subpart) and are part of the source to which this subpart applies.

(i) The Aromex unit that produces benzene, toluene, and xylene;

(ii) The unit that produces hexane; or

(iii) The unit that produces cyclohexane.

(j) The provisions of subparts F, G, and H of this part do not apply to the

processes specified in paragraphs (j)(1) through (j)(6) of this section. Subparts F, G, and H do not require processes specified in paragraphs (j)(1) through (j)(6) to comply with the provisions of subpart A of this part.

(1) Research and development facilities, regardless of whether the facilities are located at the same plant site as a chemical manufacturing process unit that is subject to the provisions of subparts F, G, or H of this part.

(2) Petroleum refining process units, regardless of whether the units supply feedstocks that include chemicals listed in table 1 of this subpart to chemical manufacturing process units that are subject to the provisions of subparts F, G, or H of this part.

(3) Ethylene process units, regardless of whether the units supply feedstocks that include chemicals listed in table 1 of this subpart to chemical manufacturing process units that are subject to the provisions of subpart F, G, or H of this part.

(4) Equipment that is located within a chemical manufacturing process unit that is subject to this subpart but does not contain organic hazardous air pollutants.

(5) Chemical manufacturing process units that are located in coke by-product recovery plants.

(6) Solvent reclamation, recovery, or recycling operations at hazardous waste TSDF facilities requiring a permit under 40 CFR part 270 that are separate entities and not part of a SOCOMI chemical manufacturing process unit.

(k) Except as provided in paragraphs (l) and (m) of this section, sources subject to subpart F, G, or H of this part are required to achieve compliance on or before the dates specified in paragraphs (k)(1) through (k)(8) of this section.

(1) New sources that commence construction or reconstruction after December 31, 1992, shall be in compliance with subparts F, G, and H of this part upon initial start-up or April 22, 1994, whichever is later, as provided in §63.6(b) of subpart A of this part.

(2) Existing sources shall be in compliance with subparts F and G of this part no later than 3 years after April 22, 1994, as provided in §63.6(c) of subpart A of this part, unless an extension

has been granted by the Administrator as provided in §63.151(a)(6) of subpart G of this part or granted by the operating permit authority as provided in §63.6(i) of subpart A of this part.

(3) Existing sources shall be in compliance with subpart H of this part no later than the dates specified in paragraphs (k)(3)(i) through (k)(3)(v) of this section, except as provided for in paragraphs (k)(4) through (k)(8) of this section, unless an extension has been granted by the Administrator as provided in §63.182(a)(6) of subpart H of this part or granted by the operating permit authority as provided in §63.6(i) of subpart A of this part. The group designation for each process unit is indicated in table 1 of this subpart.

(i) Group I: October 24, 1994.

(ii) Group II: January 23, 1995.

(iii) Group III: April 24, 1995.

(iv) Group IV: July 24, 1995.

(v) Group V: October 23, 1995.

(4) Existing chemical manufacturing process units in Groups I and II as identified in table 1 of this subpart shall be in compliance with the requirements of §63.164 of subpart H no later than May 10, 1995, for any compressor meeting one or more of the criteria in paragraphs (k)(4)(i) through (k)(4)(iv) of this section, if the work can be accomplished without a process unit shutdown, as defined in §63.161 in subpart H.

(i) The seal system will be replaced;

(ii) A barrier fluid system will be installed;

(iii) A new barrier fluid will be utilized which requires changes to the existing barrier fluid system; or

(iv) The compressor must be modified to permit connecting the compressor to a closed vent system.

(5) Existing chemical manufacturing process units shall be in compliance with the requirements of §63.164 in subpart H no later than 1 year after the applicable compliance date specified in paragraph (k)(3) of this section, for any compressor meeting the criteria in paragraphs (k)(5)(i) through (k)(5)(iv) of this section.

(i) The compressor meets one or more of the criteria specified in paragraphs (k)(4) (i) through (iv) of this section;

(ii) The work can be accomplished without a process unit shutdown as defined in §63.161 of subpart H;

(iii) The additional time is actually necessary due to the unavailability of parts beyond the control of the owner or operator; and

(iv) The owner or operator submits a request to the appropriate EPA Regional Office at the addresses listed in §63.13 of subpart A of this part no later than 45 days before the applicable compliance date in paragraph (k)(3) of this section, but in no event earlier than May 10, 1995. The request shall include the information specified in paragraphs (k)(5)(iv)(A) through (k)(5)(iv)(E) of this section. Unless the EPA Regional Office objects to the request within 30 days after receipt, the request shall be deemed approved.

(A) The name and address of the owner or operator and the address of the existing source if it differs from the address of the owner or operator;

(B) The name, address, and telephone number of a contact person for further information;

(C) An identification of the chemical manufacturing process unit, and of the specific equipment for which additional compliance time is required;

(D) The reason compliance can not reasonably be achieved by the applicable date specified in paragraphs (k)(3)(i) through (k)(3)(v) of this section; and

(E) The date by which the owner or operator expects to achieve compliance.

(6)(i) If compliance with the compressor provisions of §63.164 of subpart H of this part can not reasonably be achieved without a process unit shutdown, as defined in §63.161 of subpart H, the owner or operator shall achieve compliance no later than April 22, 1996, except as provided for in paragraph (k)(6)(ii) of this section. The owner or operator who elects to use this provision shall comply with the requirements of §63.103(g) of this subpart.

(ii) If compliance with the compressor provisions of §63.164 of subpart H of this part can not be achieved without replacing the compressor or recasting the distance piece, the owner or operator shall achieve compliance no later

than April 22, 1997. The owner or operator who elects to use this provision shall also comply with the requirements of § 63.103(g) of this subpart.

(7) Existing sources shall be in compliance with the provisions of § 63.170 of subpart H no later than April 22, 1997.

(8) If an owner or operator of a chemical manufacturing process unit subject to the provisions of subparts F, G, and H of part 63 plans to implement pollution prevention measures to eliminate the use or production of HAP listed in table 2 of this subpart by October 23, 1995, the provisions of subpart H do not apply regardless of the compliance dates specified in paragraph (k)(3) of this section. The owner or operator who elects to use this provision shall comply with the requirements of § 63.103(h) of this subpart.

(l)(1) If an additional chemical manufacturing process unit meeting the criteria specified in paragraph (b) of this section is added to a plant site that is a major source as defined in section 112(a) of the Act, the addition shall be subject to the requirements for a new source in subparts F, G, and H of this part if:

(i) It is an addition that meets the definition of construction in § 63.2 of subpart A of this part;

(ii) Such construction commenced after December 31, 1992; and

(iii) The addition has the potential to emit 10 tons per year or more of any HAP or 25 tons per year or more of any combination of HAP's, unless the Administrator establishes a lesser quantity.

(2) If any change is made to a chemical manufacturing process unit subject to this subpart, the change shall be subject to the requirements of a new source in subparts F, G, and H of this part if:

(i) It is a change that meets the definition of reconstruction in § 63.2 of subpart A of this part; and

(ii) Such reconstruction commenced after December 31, 1992.

(3) If an additional chemical manufacturing process unit is added to a plant site or a change is made to a chemical manufacturing process unit and the addition or change is determined to be subject to the new source

requirements according to paragraph (l)(1) or (l)(2) of this section:

(i) The new or reconstructed source shall be in compliance with the new source requirements of subparts F, G, and H of this part upon initial start-up of the new or reconstructed source or by April 22, 1994, whichever is later; and

(ii) The owner or operator of the new or reconstructed source shall comply with the reporting and recordkeeping requirements in subparts F, G, and H of this part that are applicable to new sources. The applicable reports include, but are not limited to:

(A) The application for approval of construction or reconstruction which shall be submitted by the date specified in § 63.151(b)(2)(ii) of subpart G of this part, or an Initial Notification as specified in § 63.151(b)(2)(iii) of subpart G of this part;

(B) The Implementation Plan and Implementation Plan Updates required by § 63.151(c) and (j) of subpart G of this part, unless the information has been submitted in an operating permit application or amendment;

(C) The Notification of Compliance Status as required by § 63.152(b) of subpart G of this part for the new or reconstructed source;

(D) Periodic Reports and Other Reports as required by § 63.152(c) and (d) of subpart G of this part;

(E) Reports required by § 63.182 of subpart H of this part; and

(F) Reports and notifications required by sections of subpart A of this part that are applicable to subparts F, G, and H of this part, as identified in table 3 of this subpart.

(4) If an additional chemical manufacturing process unit is added to a plant site, or if an emission point is added to an existing chemical manufacturing process unit, or if another deliberate operational process change creating an additional Group 1 emission point(s) is made to an existing chemical manufacturing process unit, or if a surge control vessel or bottoms receiver becomes subject to § 63.170 of subpart H, or if a compressor becomes subject to § 63.164 of subpart H, and if the addition or change is not subject to the new source requirements as determined according to paragraph (l)(1) or

(l)(2) of this section, the requirements in paragraphs (l)(4)(i) through (l)(4)(iii) of this section shall apply. Examples of process changes include, but are not limited to, changes in production capacity, feedstock type, or catalyst type, or whenever there is replacement, removal, or addition of recovery equipment. For purposes of this paragraph and paragraph (m) of this section, process changes do not include: Process upsets, unintentional temporary process changes, and changes that are within the equipment configuration and operating conditions documented in the Notification of Compliance Status required by § 63.152(b) of subpart G of this part.

(i) The added emission point(s) and any emission point(s) within the added or changed chemical manufacturing process unit are subject to the requirements of subparts F, G, and H of this part for an existing source;

(ii) The added emission point(s) and any emission point(s) within the added or changed chemical manufacturing process unit shall be in compliance with subparts F, G, and H of this part by the dates specified in paragraph (l)(4)(ii) (A) or (B) of this section, as applicable.

(A) If a chemical manufacturing process unit is added to a plant site or an emission point(s) is added to an existing chemical manufacturing process unit, the added emission point(s) shall be in compliance upon initial start-up of the added chemical manufacturing process unit or emission point(s) or by 3 years after April 22, 1994, whichever is later.

(B) If a deliberate operational process change to an existing chemical manufacturing process unit causes a Group 2 emission point to become a Group 1 emission point, if a surge control vessel or bottoms receiver becomes subject to § 63.170 of subpart H, or if a compressor becomes subject to § 63.164 of subpart H, the owner or operator shall be in compliance upon initial start-up or by 3 years after April 22, 1994, whichever is later, unless the owner or operator demonstrates to the Administrator that achieving compliance will take longer than making the change. If this demonstration is made to the Administrator's satisfaction, the owner or op-

erator shall follow the procedures in paragraphs (m)(1) through (m)(3) of this section to establish a compliance date.

(iii) The owner or operator of a chemical manufacturing process unit or emission point that is added to a plant site and is subject to the requirements for existing sources shall comply with the reporting and recordkeeping requirements of subparts F, G, and H of this part that are applicable to existing sources, including, but not limited to, the reports listed in paragraphs (l)(4)(iii) (A) through (E) of this section. A change to an existing chemical manufacturing process unit shall be subject to the reporting requirements for existing sources including, but not limited to, the reports listed in paragraphs (l)(4)(iii) (A) through (E) of this section if the change meets the criteria specified in § 63.118 (g), (h), (i), or (j) of subpart G of this part for process vents or the criteria in § 63.151 (i) or (j) of subpart G of this part for Implementation Plan Updates. The applicable reports include, but are not limited to:

(A) The Implementation Plan Updates specified in § 63.151 (i) and (j) of subpart G of this part, unless the information has been submitted in an operating permit application or amendment;

(B) The Notification of Compliance Status as required by § 63.152(b) of subpart G of this part for the emission points that were added or changed;

(C) Periodic Reports and other reports as required by § 63.152 (c) and (d) of subpart G of this part;

(D) Reports required by § 63.182 of subpart H of this part; and

(E) Reports and notifications required by sections of subpart A of this part that are applicable to subparts F, G, and H of this part, as identified in table 3 of this subpart.

(m) If a change that does not meet the criteria in paragraph (l)(4) of this section is made to a chemical manufacturing process unit subject to subparts F and G of this part, and the change causes a Group 2 emission point to become a Group 1 emission point (as defined in § 63.111 of subpart G of this part), then the owner or operator shall comply with the requirements of subpart G of this part for the Group 1 emission point as expeditiously as

practicable, but in no event later than 3 years after the emission point becomes Group 1.

(1) The owner or operator shall submit to the Administrator for approval a compliance schedule, along with a justification for the schedule.

(2) The compliance schedule shall be submitted with the Implementation Plan update required in §63.151(i)(2) of subpart G of this part for emission points included in an emissions average or §63.151(j)(1) of subpart G of this part for emission points not in an emissions average, unless the compliance schedule has been submitted in an operating permit application or amendment.

(3) The Administrator shall approve the compliance schedule or request changes within 120 calendar days of receipt of the compliance schedule and justification.

(n) *Rules stayed for reconsideration.* Notwithstanding any other provision of this subpart, the effectiveness of subpart F is stayed from October 24, 1994, to April 24, 1995, only as applied to those sources for which the owner or operator makes a representation in writing to the Administrator that the resolution of the area source definition issues could have an effect on the compliance status of the source with respect to subpart F.

(o) *Sections stayed for reconsideration.* Notwithstanding any other provision of this subpart, the effectiveness of §§63.164 and 63.170 of subpart H is stayed from October 28, 1994, to April 24, 1995, only as applied to those sources subject to §63.100(k)(3) (i) and (ii).

[59 FR 19454, Apr. 22, 1994, as amended at 59 FR 53360, Oct. 24, 1994; 59 FR 54132, Oct. 28, 1994; 60 FR 5321, Jan. 27, 1995; 60 FR 18023, 18028, Apr. 10, 1995; 60 FR 63626, Dec. 12, 1995; 61 FR 7718, Feb. 29, 1996]

#### §63.101 Definitions.

(a) The following terms as used in subparts F, G, and H of this part shall have the meaning given them in subpart A of this part: Act, actual emissions, Administrator, affected source, approved permit program, commenced, compliance date, construction, continuous monitoring system, continuous parameter monitoring system, effective date, emission standard, emissions

averaging, EPA, equivalent emission limitation, existing source, Federally enforceable, fixed capital cost, hazardous air pollutant, lesser quantity, major source, malfunction, new source, owner or operator, performance evaluation, performance test, permit program, permitting authority, reconstruction, relevant standard, responsible official, run, standard conditions, State, and stationary source.

(b) All other terms used in this subpart and subparts G and H of this part shall have the meaning given them in the Act and in this section. If the same term is defined in subpart A of this part and in this section, it shall have the meaning given in this section for purposes of subparts F, G, and H of this part.

*Air oxidation reactor* means a device or vessel in which air, or a combination of air and oxygen, is used as an oxygen source in combination with one or more organic reactants to produce one or more organic compounds. Air oxidation reactor includes the product separator and any associated vacuum pump or steam jet.

*Batch operation* means a noncontinuous operation in which a discrete quantity or batch of feed is charged into a unit operation within a chemical manufacturing process unit and processed at one time. Batch operation includes noncontinuous operations in which the equipment is fed intermittently or discontinuously. Addition of raw material and withdrawal of product do not occur simultaneously in a batch operation. After each batch operation, the equipment is generally emptied before a fresh batch is started.

*Bottoms receiver* means a tank that collects distillation bottoms before the stream is sent for storage or for further downstream processing.

*By-product* means a chemical that is produced coincidentally during the production of another chemical.

*Chemical manufacturing process unit* means the equipment assembled and connected by pipes or ducts to process raw materials and to manufacture an intended product. For the purpose of this subpart, chemical manufacturing process unit includes air oxidation reactors and their associated product

separators and recovery devices; reactors and their associated product separators and recovery devices; distillation units and their associated distillate receivers and recovery devices; associated unit operations (as defined in this section); and any feed, intermediate and product storage vessels, product transfer racks, and connected ducts and piping. A chemical manufacturing process unit includes pumps, compressors, agitators, pressure relief devices, sampling connection systems, open-ended valves or lines, valves, connectors, instrumentation systems, and control devices or systems. A chemical manufacturing process unit is identified by its primary product.

*Control device* means any equipment used for recovering or oxidizing organic hazardous air pollutant vapors. Such equipment includes, but is not limited to, absorbers, carbon adsorbers, condensers, incinerators, flares, boilers, and process heaters. For process vents (as defined in this section), recovery devices are not considered control devices.

*Co-product* means a chemical that is produced during the production of another chemical.

*Distillate receiver* means overhead receivers, overhead accumulators, reflux drums, and condenser(s) including ejector-condenser(s) associated with a distillation unit.

*Distillation unit* means a device or vessel in which one or more feed streams are separated into two or more exit streams, each exit stream having component concentrations different from those in the feed stream(s). The separation is achieved by the redistribution of the components between the liquid and the vapor phases by vaporization and condensation as they approach equilibrium within the distillation unit. Distillation unit includes the distillate receiver, reboiler, and any associated vacuum pump or steam jet.

*Emission point* means an individual process vent, storage vessel, transfer rack, wastewater stream, or equipment leak.

*Equipment leak* means emissions of organic hazardous air pollutants from a pump, compressor, agitator, pressure relief device, sampling connection sys-

tem, open-ended valve or line, valve, surge control vessel, bottoms receiver, or instrumentation system in organic hazardous air pollutant service as defined in §63.161 of subpart H of this part.

*Ethylene process* or *ethylene process unit* means a chemical manufacturing process unit in which ethylene and/or propylene are produced by separation from petroleum refining process streams or by subjecting hydrocarbons to high temperatures in the presence of steam. The ethylene process unit includes the separation of ethylene and/or propylene from associated streams such as a C<sub>4</sub> product, pyrolysis gasoline, and pyrolysis fuel oil. The ethylene process does not include the manufacture of SOCOMI chemicals such as the production of butadiene from the C<sub>4</sub> stream and aromatics from pyrolysis gasoline.

*Flexible operation unit* means a chemical manufacturing process unit that manufactures different chemical products periodically by alternating raw materials or operating conditions. These units are also referred to as campaign plants or blocked operations.

*Heat exchange system* means any cooling tower system or once-through cooling water system (e.g., river or pond water). A heat exchange system can include more than one heat exchanger and can include an entire recirculating or once-through cooling system.

*Impurity* means a substance that is produced coincidentally with the primary product, or is present in a raw material. An impurity does not serve a useful purpose in the production or use of the primary product and is not isolated.

*Initial start-up* means the first time a new or reconstructed source begins production, or, for equipment added or changed as described in §63.100 (l) or (m) of this subpart, the first time the equipment is put into operation. Initial start-up does not include operation solely for testing equipment. For purposes of subpart G of this part, initial start-up does not include subsequent start-ups (as defined in this section) of chemical manufacturing process units following malfunctions or shutdowns or following changes in product for

flexible operation units or following recharging of equipment in batch operation. For purposes of subpart H of this part, initial start-up does not include subsequent start-ups (as defined in §63.161 of subpart H of this part) of process units (as defined in §63.161 of subpart H of this part) following malfunctions or process unit shutdowns.

*Loading rack* means a single system used to fill tank trucks and railcars at a single geographic site. Loading equipment and operations that are physically separate (i.e., do not share common piping, valves, and other equipment) are considered to be separate loading racks.

*Maintenance wastewater* means wastewater generated by the draining of process fluid from components in the chemical manufacturing process unit into an individual drain system prior to or during maintenance activities. Maintenance wastewater can be generated during planned and unplanned shutdowns and during periods not associated with a shutdown. Examples of activities that can generate maintenance wastewaters include descaling of heat exchanger tubing bundles, cleaning of distillation column traps, draining of low legs and high point bleeds, draining of pumps into an individual drain system, and draining of portions of the chemical manufacturing process unit for repair.

*Operating permit* means a permit required by 40 CFR part 70 or 71.

*Organic hazardous air pollutant* or *organic HAP* means one of the chemicals listed in table 2 of this subpart.

*Petroleum refining process*, also referred to as a *petroleum refining process unit*, means a process that for the purpose of producing transportation fuels (such as gasoline and diesel fuels), heating fuels (such as fuel gas, distillate, and residual fuel oils), or lubricants separates petroleum or separates, cracks, or reforms unfinished derivatives. Examples of such units include, but are not limited to, alkylation units, catalytic hydrotreating, catalytic hydrorefining, catalytic hydrocracking, catalytic reforming, catalytic cracking, crude distillation, and thermal processes.

*Plant site* means all contiguous or adjoining property that is under common

control, including properties that are separated only by a road or other public right-of-way. Common control includes properties that are owned, leased, or operated by the same entity, parent entity, subsidiary, or any combination thereof.

*Process vent* means a gas stream containing greater than 0.005 weight percent total organic hazardous air pollutants that is continuously discharged during operation of the unit from an air oxidation reactor, other reactor, or distillation unit (as defined in this section) within a chemical manufacturing process unit that meets all applicability criteria specified in §63.100(b)(1) through (b)(3) of this subpart. Process vents include vents from distillate receivers, product separators, and ejector-condensers. Process vents include gas streams that are either discharged directly to the atmosphere or are discharged to the atmosphere after diversion through a product recovery device. Process vents exclude relief valve discharges and leaks from equipment regulated under subpart H of this part.

*Process wastewater* means wastewater which, during manufacturing or processing, comes into direct contact with or results from the production or use of any raw material, intermediate product, finished product, by-product, or waste product. Examples are product tank drawdown or feed tank drawdown; water formed during a chemical reaction or used as a reactant; water used to wash impurities from organic products or reactants; water used to cool or quench organic vapor streams through direct contact; and condensed steam from jet ejector systems pulling vacuum on vessels containing organics.

*Product* means a compound or chemical which is manufactured as the intended product of the chemical manufacturing process unit. By-products, isolated intermediates, impurities, wastes, and trace contaminants are not considered products.

*Product separator* means phase separators, flash drums, knock-out drums, decanters, degassers, and condenser(s) including ejector-condenser(s) associated with a reactor or an air oxidation reactor.

*Reactor* means a device or vessel in which one or more chemicals or

reactants, other than air, are combined or decomposed in such a way that their molecular structures are altered and one or more new organic compounds are formed. Reactor includes the product separator and any associated vacuum pump or steam jet.

*Recovery device* means an individual unit of equipment capable of and used for the purpose of recovering chemicals for use, reuse, or sale. Recovery devices include, but are not limited to, absorbers, carbon adsorbers, and condensers.

*Research and development facility* means laboratory and pilot plant operations whose primary purpose is to conduct research and development into new processes and products, where the operations are under the close supervision of technically trained personnel, and is not engaged in the manufacture of products for commercial sale, except in a *de minimis* manner.

*Shutdown* means the cessation of operation of a chemical manufacturing process unit or a reactor, air oxidation reactor, distillation unit, or the emptying and degassing of a storage vessel for purposes including, but not limited to, periodic maintenance, replacement of equipment, or repair. Shutdown does not include the routine rinsing or washing of equipment in batch operation between batches.

*Source* means the collection of emission points to which this subpart applies as determined by the criteria in § 63.100 of this subpart. For purposes of subparts F, G, and H of this part, the term *affected source* as used in subpart A of this part has the same meaning as the term *source* defined here.

*Start-up* means the setting into operation of a chemical manufacturing process unit for the purpose of production. Start-up does not include operation solely for testing equipment. Start-up does not include the recharging of equipment in batch operation. Start-up does not include changes in product for flexible operation units.

*Start-up, shutdown, and malfunction plan* means the plan required under § 63.6(e)(3) of subpart A of this part. This plan details the procedures for operation and maintenance of the source during periods of start-up, shutdown, and malfunction.

*Storage vessel* means a tank or other vessel that is used to store organic liquids that contain one or more of the organic HAP's listed in table 2 of this subpart and that has been assigned, according to the procedures in § 63.100(g) of this subpart, to a chemical manufacturing process unit that is subject to this subpart. Storage vessel does not include:

(1) Vessels permanently attached to motor vehicles such as trucks, railcars, barges, or ships;

(2) Pressure vessels designed to operate in excess of 204.9 kilopascals and without emissions to the atmosphere;

(3) Vessels with capacities smaller than 38 cubic meters;

(4) Vessels storing organic liquids that contain organic hazardous air pollutants only as impurities;

(5) Bottoms receiver tanks;

(6) Surge control vessels; or

(7) Wastewater storage tanks. Wastewater storage tanks are covered under the wastewater provisions.

Surge control vessel means feed drums, recycle drums, and intermediate vessels. Surge control vessels are used within a chemical manufacturing process unit when in-process storage, mixing, or management of flow rates or volumes is needed to assist in production of a product.

*Transfer operation* means the loading, into a tank truck or railcar, of organic liquids that contain one or more of the organic hazardous air pollutants listed in table 2 of this subpart from a transfer rack (as defined in this section). Transfer operations do not include loading at an operating pressure greater than 204.9 kilopascals.

*Transfer rack* means the collection of loading arms and loading hoses, at a single loading rack, that are assigned to a chemical manufacturing process unit subject to this subpart according to the procedures specified in § 63.100(h) of this subpart and are used to fill tank trucks and railcars with organic liquids that contain one or more of the organic hazardous air pollutants listed in table 2 of this subpart. Transfer rack includes the associated pumps, meters, shutoff valves, relief valves, and other piping and valves. Transfer rack does not include:

(1) Racks, arms, or hoses that only transfer liquids containing organic hazardous air pollutants as impurities;

(2) Racks, arms, or hoses that vapor balance during all loading operations; or

(3) Racks transferring organic liquids that contain organic hazardous air pollutants only as impurities.

*Unit operation* means one or more pieces of process equipment used to make a single change to the physical or chemical characteristics of one or more process streams. Unit operations include, but are not limited to, reactors, distillation columns, extraction columns, absorbers, decanters, dryers, condensers, and filtration equipment.

*Vapor balancing system* means a piping system that is designed to collect organic HAP vapors displaced from tank trucks or railcars during loading; and to route the collected organic HAP vapors to the storage vessel from which the liquid being loaded originated, or to compress collected organic HAP vapors and commingle with the raw feed of a chemical manufacturing process unit.

*Wastewater* means organic hazardous air pollutant-containing water, raw material, intermediate, product, by-product, co-product, or waste material that exits equipment in a chemical manufacturing process unit that meets all of the criteria specified in § 63.100(b)(1) through (b)(3) of this subpart; and either:

(1) Contains a total volatile organic hazardous air pollutant concentration of at least 5 parts per million by weight and has a flow rate of 0.02 liter per minute or greater; or

(2) Contains a total volatile organic hazardous air pollutant concentration of at least 10,000 parts per million by weight at any flow rate.

Wastewater includes process wastewater and maintenance wastewater.

[59 FR 19454, Apr. 22, 1994, as amended at 60 FR 18024, Apr. 10, 1995; 60 FR 63626, Dec. 12, 1995]

#### § 63.102 General standards.

(a) Owners and operators of sources subject to this subpart shall comply with the requirements of subparts G and H of this part.

(1) The provisions set forth in subparts F and G of this part shall apply at all times except during periods of start-up, malfunction, and shutdown (as defined in § 63.101 of this subpart). However, if a start-up, shutdown, or malfunction of one portion of a chemical manufacturing process unit does not affect the ability of a particular emission point to comply with the specific provisions to which it is subject, then that emission point shall still be required to comply with the applicable provisions of subparts F and G during the start-up, shutdown, or malfunction. For example, if there is an overpressure in the reactor area, a storage vessel in the chemical manufacturing process unit would still be required to be controlled in accordance with § 63.119 of subpart G of this part. Similarly, the degassing of a storage vessel would not affect the ability of a process vent to meet the requirements of § 63.113 of subpart G of this part.

(2) The provisions set forth in subpart H of this part shall apply at all times except during periods of start-up, malfunction, and process unit shutdown (as defined in § 63.161 of subpart H of this part).

(b) If, in the judgment of the Administrator, an alternative means of emission limitation will achieve a reduction in organic HAP emissions at least equivalent to the reduction in organic HAP emissions from that source achieved under any design, equipment, work practice, or operational standards in subpart G or H of this part, the Administrator will publish in the FEDERAL REGISTER a notice permitting the use of the alternative means for purposes of compliance with that requirement.

(1) The notice may condition the permission on requirements related to the operation and maintenance of the alternative means.

(2) Any notice under paragraph (b) of this section shall be published only after public notice and an opportunity for a hearing.

(3) Any person seeking permission to use an alternative means of compliance under this section shall collect, verify, and submit to the Administrator information showing that the alternative

means achieves equivalent emission reductions.

(c) Each owner or operator of a source subject to this subpart shall obtain a permit under 40 CFR part 70 or part 71 from the appropriate permitting authority.

(1) If the EPA has approved a State operating permit program under 40 CFR Part 70, the permit shall be obtained from the State authority. If the State operating permit program has not been approved, the source shall apply to the EPA Regional Office.

(2) If an operating permit application has not been submitted by the dates specified in §63.151(c) of subpart G of this part, the owner or operator shall submit an Implementation Plan as specified in §63.151 (c), (d), and (e) of subpart G of this part.

(d) The requirements in subparts F, G, and H of this part are Federally enforceable under section 112 of the Act on and after the dates specified in §63.100(k) of this subpart.

[59 FR 19454, Apr. 22, 1994, as amended at 60 FR 63626, Dec. 12, 1995]

**§63.103 General compliance, reporting, and recordkeeping provisions.**

(a) Table 3 of this subpart specifies the provisions of subpart A that apply and those that do not apply to owners and operators of sources subject to subparts F, G, and H of this part.

(b) Initial performance tests and initial compliance determinations shall be required only as specified in subparts G and H of this part.

(1) Performance tests and compliance determinations shall be conducted according to the schedule and procedures in §63.7(a) of subpart A of this part and the applicable sections of subparts G and H of this part.

(2) The owner or operator shall notify the Administrator of the intention to conduct a performance test at least 30 calendar days before the performance test is scheduled to allow the Administrator the opportunity to have an observer present during the test.

(3) Performance tests shall be conducted according to the provisions of §63.7(e) of subpart A of this part, except that performance tests shall be conducted at maximum representative operating conditions for the process.

During the performance test, an owner or operator may operate the control or recovery device at maximum or minimum representative operating conditions for monitored control or recovery device parameters, whichever results in lower emission reduction.

(4) Data shall be reduced in accordance with the EPA-approved methods specified in the applicable subpart or, if other test methods are used, the data and methods shall be validated according to the protocol in Method 301 of appendix A of this part.

(5) Performance tests may be waived with approval of the Administrator as specified in §63.7(h)(2) of subpart A of this part. Owners or operators of sources subject to subparts F, G, and H of this part who apply for a waiver of a performance test shall submit the application by the dates specified in paragraph (b)(5)(i) of this section rather than the dates specified in §63.7(h)(3) of subpart A of this part.

(i) If a request is made for an extension of compliance under §63.151(a)(6) of subpart G or §63.6(i) of subpart A of this part, the application for a waiver of an initial performance test shall accompany the information required for the request for an extension of compliance. If no extension of compliance is requested, the application for a waiver of an initial performance test shall be submitted no later than 90 calendar days before the Notification of Compliance Status required in §63.152(b) of subpart G of this part is due to be submitted.

(ii) Any application for a waiver of a performance test shall include information justifying the owner or operator's request for a waiver, such as the technical or economic infeasibility, or the impracticality, of the source performing the required test.

(c) Each owner or operator of a source subject to subparts F, G, and H of this part shall keep copies of all applicable reports and records required by subparts F, G, and H of this part for at least 5 years; except that, if subparts G or H require records to be maintained for a time period different than 5 years, those records shall be maintained for the time specified in subpart G or H of this part.

(1) All applicable records shall be maintained in such a manner that they can be readily accessed. The most recent 2 years of records shall be retained on site at the source or shall be accessible from a central location by computer. The remaining 3 years of records may be retained offsite. Records may be maintained in hard copy or computer-readable form including, but not limited to, on paper, microfilm, computer, floppy disk, magnetic tape, or microfiche.

(2) The owner or operator subject to subparts F, G, and H of this part shall keep the records specified in this paragraph, as well as records specified in subparts G and H.

(i) Records of the occurrence and duration of each start-up, shutdown, and malfunction of operation of a chemical manufacturing process unit subject to subpart F, G, or H of this part.

(ii) Records of the occurrence and duration of each malfunction of air pollution control equipment or continuous monitoring systems used to comply with subpart F, G, or H of this part.

(iii) For each start-up, shutdown, and malfunction, records that the procedures specified in the source's start-up, shutdown, and malfunction plan were followed, and documentation of actions taken that are not consistent with the plan. For example, if a start-up, shutdown, and malfunction plan includes procedures for routing a control device to a backup control device (e.g., the incinerator for a halogenated stream could be routed to a flare during periods when the primary control device is out of service), records must be kept of whether the plan was followed.

(iv) For continuous monitoring systems used to comply with subpart G, records documenting the completion of calibration checks and maintenance of continuous monitoring systems that are specified in the manufacturer's instructions.

(3) Records of start-up, shutdown and malfunction and continuous monitoring system calibration and maintenance are not required if they pertain solely to Group 2 emission points, as defined in §63.111 of subpart G of this part, that are not included in an emissions average.

(d) All reports required under subparts F, G, and H of this part shall be sent to the Administrator at the addresses listed in §63.13 of subpart A of this part, except that requests for permission to use an alternative means of compliance as provided for in §63.102(b) of this subpart and application for approval of a nominal efficiency as provided for in §63.150 (i)(1) through (i)(6) of subpart G of this part shall be submitted to the Director of the EPA Office of Air Quality Planning and Standards rather than to the Administrator or delegated authority.

(1) Wherever subpart A specifies "postmark" dates, submittals may be sent by methods other than the U.S. Mail (e.g., by fax or courier).

(i) Submittals sent by U.S. Mail shall be postmarked on or before the specified date.

(ii) Submittals sent by other methods shall be received by the Administrator on or before the specified date.

(2) If acceptable to both the Administrator and the owner or operator of a source, reports may be submitted on electronic media.

(e) The basis for the determination that a chemical manufacturing unit does not use as a reactant or manufacture as a product any organic hazardous air pollutant shall be documented. Examples of information that could document this include, but are not limited to, records of chemicals purchased for the process, analyses of process stream composition, engineering calculations, or process knowledge.

(f) To qualify for the exemption specified in §63.100(b)(4) of this subpart, the owner or operator shall maintain the documentation of the information required pursuant to §63.100(b)(4)(i), and documentation of any update of this information requested by the EPA Regional Office, and shall provide the documentation to the EPA Regional Office upon request. The EPA Regional Office will notify the owner or operator, after reviewing such documentation, if the source does not qualify for the exemption specified in §63.100(b)(4) of this section. In such cases, compliance with subpart H shall be required no later than 90 days after expiration of the applicable compliance date in §63.100(k)(3), but in no event earlier

than 90 days after the date of such notification by the EPA Regional Office. Compliance with subparts F and G shall be no later than April 22, 1997, unless an extension has been granted by the EPA Regional Office or operating permit authority as provided in § 63.6(i) of subpart A of this part.

(g) An owner or operator who elects to use the compliance extension provisions of § 63.100(k)(6)(i) or (ii) shall submit a compliance extension request to the appropriate EPA Regional Office no later than 45 days before the applicable compliance date in § 63.100(k)(3), but in no event is submittal required earlier than May 10, 1995. The request shall contain the information specified in § 63.100(k)(5)(iv) and the reason compliance can not reasonably be achieved without a process unit shutdown, as defined in 40 CFR 63.161 or without replacement of the compressor or recasting of the distance piece.

(h) An owner or operator who elects to use the compliance extension provisions of § 63.100(k)(8) shall submit to the appropriate EPA Regional Office a brief description of the process change, identify the HAP eliminated, and the expected date of cessation of use or production of HAP. The description shall be submitted no later than May 10, 1995, or with the Notice of Compliance Status as required in § 63.182(c) of subpart H, whichever is later.

[59 FR 19454, Apr. 22, 1994, as amended at 59 FR 48176, Sept. 20, 1994; 60 FR 18024, Apr. 10, 1995]

**§ 63.104 Heat exchange system requirements.**

(a) Owners and operators of sources subject to subpart G of this part shall comply with the requirements specified in paragraphs (b) and (c) of this section.

(b) For each heat exchange system that cools process equipment or a process fluid and that is part of a chemical manufacturing process unit that is subject to the provisions of this subpart, the owner or operator shall comply with the requirements of paragraphs (b)(1) through (b)(4) of this section, except as provided in paragraph (c) of this section.

(1) The cooling water shall be monitored monthly for the first 6 months

and quarterly thereafter to detect leaks.

(i) The cooling water shall be monitored for total HAP, total VOC, or speciated HAP's.

(A) For recirculating heat exchange systems (cooling tower systems), speciated HAP's or total HAP's includes all HAP's listed in table 2 of this subpart, except for benzotrichloride (98077), bis(chloromethyl)ether (542881), maleic anhydride (108316), and methyl isocyanate (624839).

(B) For once-through heat exchange systems, speciated HAP's or total HAP's includes all HAP's listed in table 9 of subpart G of this part.

(C) Only HAP that are present in the process fluid in concentrations greater than 5 percent by weight are required to be measured in the cooling water.

(ii) The concentration in the cooling water shall be determined using any EPA-approved method listed in 40 CFR part 136 as long as the method is sensitive to concentrations as low as 1 ppm and the same method is used for both entrance and exit samples. Alternative methods may be used upon approval by the Administrator.

(iii) The samples shall be taken at the entrance and exit of each heat exchange system.

(A) For recirculating heat exchange systems, the entrance and exit are the points at which the cooling water enters the cooling tower after cooling the process fluid and exits the cooling tower prior to cooling the process fluid.

(B) For once-through heat exchange systems, the entrance and exit are the points where the cooling water enters and exits the plant site.

(iv) A minimum of three sets of samples shall be taken of the cooling water at the entrance and exit of the system, for a total of six samples. The average inlet and outlet concentrations shall then be calculated.

(v) A leak is detected if a statistically significant difference in concentration of at least 1 part per million at the 95 percent confidence level is observed.

(2) If a leak is detected, the owner or operator shall comply with the requirements in paragraphs (b)(2)(i) and

(b)(2)(ii) of this section, except as provided in paragraph (b)(3) of this section.

(i) The leak shall be repaired as soon as practicable but not later than 45 calendar days after the owner or operator receives results of monitoring tests that indicate that a leak is present. Repair of a leak can include such activities as repairing a leaking heat exchanger or rerouting the waste from a steam jet ejector.

(ii) Once the leak has been repaired, the owner or operator must test the heat exchange system using the procedures described in paragraph (b)(1) of this section to ensure that the leak has been repaired.

(3) Delay of repair of heat exchange systems for which leaks have been detected is allowed if either of the conditions in paragraph (b)(3)(i) or (b)(3)(ii) of this section are met.

(i) If the owner or operator can demonstrate that a shutdown would cause greater emissions than the emissions from the leaking heat exchange system until the next planned shutdown, a shutdown is not required. Repair of this equipment shall occur before the end of the next shutdown.

(ii) If the equipment is isolated from the process and does not remain in HAP service.

(4) If an owner or operator invokes the delay of repair provisions for a heat exchange system, the following information shall be submitted in the next semi-annual Periodic Report required by § 63.152(c) of subpart G of this part. If the leak remains unrepaired, the information shall also be submitted in each subsequent periodic report, until repair of the leak is reported.

(i) The owner or operator shall report the presence of the leak and the date that the leak was detected.

(ii) The owner or operator shall report whether or not the leak has been repaired.

(iii) The owner or operator shall report the reason(s) for delay of repair. If delay of repair is invoked due to the reasons described in paragraph (b)(3)(i) of this section, documentation of emissions estimates must also be submitted.

(iv) If the leak remains unrepaired, the owner or operator shall report the expected date of repair.

(v) If the leak is repaired, the owner or operator shall report the date of successful repair of the leak.

(c) An owner or operator is not required to meet the requirements in paragraphs (b)(1) and (b)(2) of this section if either of the conditions in paragraph (c)(1) or (c)(2) of this section are met.

(1) The heat exchange system is operated with the minimum pressure on the cooling water side at least 35 kilopascals greater than the maximum pressure on the process side.

(2) The once-through heat exchange system currently has an NPDES permit with an allowable discharge limit of less than 1 ppm.

[59 FR 19454, Apr. 22, 1994, as amended at 60 FR 63626, Dec. 12, 1995]

#### **§ 63.105 Maintenance wastewater requirements.**

(a) Each owner or operator of a source subject to this subpart shall comply with the requirements of paragraphs (b) through (e) of this section for maintenance wastewaters containing those organic HAP's listed in table 9 of subpart G of this part.

(b) The owner or operator shall prepare a description of maintenance procedures for management of wastewaters generated from the emptying and purging of equipment in the process during temporary shutdowns for inspections, maintenance, and repair (i.e., a maintenance-turn-around) and during periods which are not shutdowns (i.e., routine maintenance). The descriptions shall:

(1) Specify the process equipment or maintenance tasks that are anticipated to create wastewater during maintenance activities.

(2) Specify the procedures that will be followed to properly manage the wastewater and control organic HAP emissions to the atmosphere; and

(3) Specify the procedures to be followed when clearing materials from process equipment.

(c) The owner or operator shall modify and update the information required by paragraph (b) of this section as needed following each maintenance

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procedure based on the actions taken and the wastewaters generated in the preceding maintenance procedure.

(d) The owner or operator shall implement the procedures described in paragraphs (b) and (c) of this section as part of the start-up, shutdown, and malfunction plan required under § 63.6(e)(3) of subpart A of this part.

(e) The owner or operator shall maintain a record of the information required by paragraphs (b) and (c) of this section as part of the start-up, shutdown, and malfunction plan required under § 63.6(e)(3) of subpart A of this part.

[59 FR 19454, Apr. 22, 1994, as amended at 60 FR 63626, Dec. 12, 1995]

**§ 63.106 Delegation of authority.**

(a) In delegating implementation and enforcement authority to a State under section 112(d) of the Act, the authorities contained in paragraph (b) of this section shall be retained by the Administrator and not transferred to a State.

(b) Authorities which will not be delegated to States: § 63.102(b) of this subpart, § 63.150(i)(1) through (i)(4) of subpart G of this part, and § 63.177 of subpart H of this part.

TABLE 1 TO SUBPART F—SYNTHETIC ORGANIC CHEMICAL MANUFACTURING INDUSTRY CHEMICALS

| Chemical name <sup>a</sup> | CAS No. <sup>b</sup> | Group |
|----------------------------|----------------------|-------|
| Acenaphthene               | 83329                | V     |
| Acetal                     | 105577               | V     |
| Acetaldehyde               | 75070                | II    |
| AcetaldoI                  | 107891               | II    |
| Acetamide                  | 60355                | II    |
| Acetanilide                | 103844               | II    |
| Acetic acid                | 64197                | II    |
| Acetic anhydride           | 108247               | II    |
| Acetoacetanilide           | 102012               | III   |
| Acetone                    | 67641                | I     |
| Acetone cyanohydrin        | 75865                | V     |
| Acetonitrile               | 75058                | I     |
| Acetophenone               | 98862                | I     |
| Acrolein                   | 107028               | IV    |
| Acrylamide                 | 79061                | I     |
| Acrylic acid               | 79107                | IV    |
| Acrylonitrile              | 107131               | I     |
| Adiponitrile               | 111693               | I     |
| Alizarin                   | 72480                | V     |
| Alkyl anthraquinones       | 008                  | V     |
| Allyl alcohol              | 107186               | I     |
| Allyl chloride             | 107051               | IV    |
| Allyl cyanide              | 109751               | IV    |
| Aminophenol sulfonic acid  | 0010                 | V     |
| Aminophenol (p-)           | 123308               | I     |
| Aniline                    | 62533                | I     |
| Aniline hydrochloride      | 142041               | III   |

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TABLE 1 TO SUBPART F—SYNTHETIC ORGANIC CHEMICAL MANUFACTURING INDUSTRY CHEMICALS—Continued

| Chemical name <sup>a</sup>           | CAS No. <sup>b</sup> | Group |
|--------------------------------------|----------------------|-------|
| Anisidine (o-)                       | 90040                | II    |
| Anthracene                           | 120127               | V     |
| Anthraquinone                        | 84651                | III   |
| Azobenzene                           | 103333               | I     |
| Benzaldehyde                         | 100527               | III   |
| Benzene                              | 71432                | I     |
| Benzenedisulfonic acid               | 98486                | I     |
| Benzenesulfonic acid                 | 98113                | I     |
| Benzil                               | 134816               | III   |
| Benzilic acid                        | 76937                | III   |
| Benzoic acid                         | 65850                | III   |
| BenzoIn                              | 119539               | III   |
| Benzonitrile                         | 100470               | III   |
| Benzophenone                         | 119619               | I     |
| Benzotrichloride                     | 98077                | III   |
| Benzoyl chloride                     | 98884                | III   |
| Benzyl acetate                       | 140114               | III   |
| Benzyl alcohol                       | 100516               | III   |
| Benzyl benzoate                      | 120514               | III   |
| Benzyl chloride                      | 100447               | III   |
| Benzyl dichloride                    | 98873                | III   |
| Biphenyl                             | 92524                | I     |
| Bisphenol A                          | 80057                | III   |
| Bis(Chloromethyl) Ether              | 542881               | I     |
| Bromobenzene                         | 108861               | I     |
| Bromoform                            | 75252                | V     |
| Bromonaphthalene                     | 27497514             | IV    |
| Butadiene (1,3-)                     | 106990               | II    |
| Butanediol (1,4-)                    | 110634               | I     |
| Butyl acrylate (n-)                  | 141322               | V     |
| Butylene glycol (1,3-)               | 107880               | II    |
| Butyrolactone                        | 96480                | I     |
| Caprolactam                          | 105602               | II    |
| Carbaryl                             | 63252                | V     |
| Carbazole                            | 86748                | V     |
| Carbon disulfide                     | 75150                | IV    |
| Carbon tetrabromide                  | 558134               | II    |
| Carbon tetrachloride                 | 56235                | I     |
| Carbon tetrafluoride                 | 75730                | II    |
| Chloral                              | 75876                | II    |
| Chloroacetic acid                    | 79118                | II    |
| Chloroacetophenone (2-)              | 532274               | I     |
| Chloroaniline (p-)                   | 106478               | II    |
| Chlorobenzene                        | 108907               | I     |
| 2-Chloro-1,3-butadiene (Chloroprene) | 126998               | II    |
| Chlorodifluoroethane                 | 25497294             | V     |
| Chlorodifluoromethane                | 75456                | I     |
| Chloroform                           | 67663                | I     |
| Chloronaphthalene                    | 25586430             | IV    |
| Chloronitrobenzene (m-)              | 121733               | I     |
| Chloronitrobenzene (o-)              | 88733                | I     |
| Chloronitrobenzene (p-)              | 100005               | I     |
| Chlorophenol (m-)                    | 108430               | II    |
| Chlorophenol (o-)                    | 95578                | II    |
| Chlorophenol (p-)                    | 106489               | II    |
| Chlorotoluene (m-)                   | 108418               | III   |
| Chlorotoluene (o-)                   | 95498                | III   |
| Chlorotoluene (p-)                   | 106434               | III   |
| Chlorotrifluoromethane               | 75729                | II    |
| Chrysene                             | 218019               | V     |
| Cresol and cresylic acid (m-)        | 108394               | III   |
| Cresol and cresylic acid (o-)        | 95487                | III   |
| Cresol and cresylic acid (p-)        | 106445               | III   |
| Cresols and cresylic acids (mixed)   | 1319773              | III   |
| Cumene                               | 98828                | I     |
| Cumene hydroperoxide                 | 80159                | I     |
| Cyanoacetic acid                     | 372098               | II    |

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TABLE 1 TO SUBPART F—SYNTHETIC ORGANIC CHEMICAL MANUFACTURING INDUSTRY CHEMICALS—Continued

| Chemical name <sup>a</sup>                     | CAS No. <sup>b</sup> | Group |
|--|----------------------|-------|
| Cyclohexane                                    | 110827               | I     |
| Cyclohexanol                                   | 108930               | I     |
| Cyclohexanone                                  | 108941               | I     |
| Cyclohexylamine                                | 108918               | III   |
| Cyclooctadienes                                | 29965977             | II    |
| Decahydronaphthalene                           | 91178                | IV    |
| Diacetoxy-2-Butene (1,4-)                      | 0012                 | V     |
| Diaminophenol hydrochloride                    | 137097               | V     |
| Dibromomethane                                 | 74953                | V     |
| Dichloroaniline (mixed isomers)                | 27134276             | I     |
| Dichlorobenzene (p-)                           | 106467               | I     |
| Dichlorobenzene (m-)                           | 541731               | I     |
| Dichlorobenzene (o-)                           | 95501                | I     |
| Dichlorobenzidine (3,3'-)                      | 91941                | I     |
| Dichlorodifluoromethane                        | 75718                | I     |
| Dichloroethane (1,2-)                          | 107062               | I     |
| (Ethylenedichloride) (EDC).                    |                      |       |
| Dichloroethyl ether (bis(2-chloroethyl)ether). | 111444               | I     |
| Dichloroethylene (1,2-)                        | 540590               | II    |
| Dichlorophenol (2,4-)                          | 120832               | III   |
| Dichloropropene (1,3-)                         | 542756               | II    |
| Dichlorotetrafluoroethane.                     | 1320372              | V     |
| Dichloro-1-butene (3,4-)                       | 760236               | II    |
| Dichloro-2-butene (1,4-)                       | 764410               | V     |
| Diethanolamine (2,2'-Iminodiethanol)           | 111422               | I     |
| Diethyl sulfate                                | 64675                | II    |
| Diethylamine                                   | 109897               | IV    |
| Diethylaniline (2,6-)                          | 579668               | V     |
| Diethylene glycol                              | 111466               | I     |
| Diethylene glycol dibutyl ether                | 112732               | I     |
| Diethylene glycol diethyl ether                | 112367               | I     |
| Diethylene glycol dimethyl ether               | 111966               | I     |
| Diethylene glycol monobutyl ether acetate.     | 124174               | I     |
| Diethylene glycol monobutyl ether              | 112345               | I     |
| Diethylene glycol monoethyl ether acetate.     | 112152               | I     |
| Diethylene glycol monoethyl ether              | 111900               | I     |
| Diethylene glycol monohexyl ether              | 112594               | V     |
| Diethylene glycol monomethyl ether acetate.    | 629389               | V     |
| Diethylene glycol monomethyl ether             | 111773               | I     |
| Dihydroxybenzoic acid (Resorcylic acid).       | 27138574             | V     |
| Dimethylbenzidine (3,3'-)                      | 119937               | II    |
| Dimethyl ether                                 | 115106               | IV    |
| Dimethylformamide (N,N-)                       | 68122                | II    |
| Dimethylhydrazine (1,1-)                       | 57147                | II    |
| Dimethyl sulfate                               | 77781                | I     |
| Dimethyl terephthalate                         | 120616               | II    |
| Dimethylamine                                  | 124403               | IV    |
| Dimethylaminoethanol (2-)                      | 108010               | I     |
| Dimethylaniline (N,N')                         | 121697               | III   |
| Dinitrobenzenes (NOS) <sup>c</sup>             | 25154545             | I     |
| Dinitrophenol (2,4-)                           | 51285                | III   |
| Dinitrotoluene (2,4-)                          | 121142               | III   |
| Dioxane (1,4-) (1,4-Diethyleneoxide)           | 1239                 | 111   |
| Dioxolane (1,3-)                               | 646060               | I     |
| Diphenyl methane                               | 101815               | I     |
| Diphenyl oxide                                 | 101848               | I     |
| Diphenyl thiourea                              | 102089               | III   |
| Diphenylamine                                  | 122394               | III   |
| Dipropylene glycol                             | 110985               | I     |
| Di-o-tolylguanidine                            | 97392                | III   |
| Dodecanedioic acid                             | 693232               | I     |

TABLE 1 TO SUBPART F—SYNTHETIC ORGANIC CHEMICAL MANUFACTURING INDUSTRY CHEMICALS—Continued

| Chemical name <sup>a</sup>                          | CAS No. <sup>b</sup> | Group |
|---|----------------------|-------|
| Dodecyl benzene (branched)                          | 123013               | V     |
| Dodecyl phenol (branched)                           | 121158585            | V     |
| Dodecylaniline                                      | 28675174             | V     |
| Dodecylbenzene (n-)                                 | 121013               | I     |
| Dodecylphenol                                       | 27193868             | III   |
| Epichlorohydrin (1-chloro-2,3-epoxypropane).        | 106898               | I     |
| Ethanolamine  | 141435               | I     |
| Ethyl acrylate                                      | 140885               | II    |
| Ethylbenzene  | 100414               | I     |
| Ethyl chloride (Chloroethane)                       | 75003                | IV    |
| Ethyl chloroacetate                                 | 105395               | II    |
| Ethylamine  | 75047                | V     |
| Ethylaniline (N-)                                   | 103695               | III   |
| Ethylaniline (o-)                                   | 578541               | III   |
| Ethylcellulose                                      | 9004573              | V     |
| Ethylcyanoacetate                                   | 105566               | V     |
| Ethylene carbonate                                  | 96491                | I     |
| Ethylene dibromide (Dibromoethane)                  | 106934               | I     |
| Ethylene glycol                                     | 107211               | I     |
| Ethylene glycol diacetate                           | 111557               | I     |
| Ethylene glycol dibutyl ether                       | 112481               | V     |
| Ethylene glycol diethyl ether (1,2-diethoxyethane). | 629141               | I     |
| Ethylene glycol dimethyl ether                      | 110714               | I     |
| Ethylene glycol monoacetate                         | 542596               | V     |
| Ethylene glycol monobutyl ether acetate.            | 112072               | I     |
| Ethylene glycol monobutyl ether                     | 111762               | I     |
| Ethylene glycol monoethyl ether acetate.            | 111159               | I     |
| Ethylene glycol monoethyl ether                     | 110805               | I     |
| Ethylene glycol monohexyl ether                     | 112254               | V     |
| Ethylene glycol monomethyl ether acetate.           | 110496               | I     |
| Ethylene glycol monomethyl ether                    | 109864               | I     |
| Ethylene glycol monoethyl ether                     | 002                  | V     |
| Ethylene glycol monophenyl ether                    | 122996               | I     |
| Ethylene glycol monopropyl ether                    | 2807309              | I     |
| Ethylene oxide                                      | 75218                | I     |
| Ethylenediamine                                     | 107153               | II    |
| Ethylenediamine tetraacetic acid                    | 60004                | V     |
| Ethylenimine (Aziridine)                            | 151564               | II    |
| Ethylhexyl acrylate (2-isomer)                      | 103117               | II    |
| Fluoranthene  | 206440               | V     |
| Formaldehyde  | 50000                | I     |
| Formamide   | 75127                | II    |
| Formic acid   | 64186                | II    |
| Fumaric acid  | 110178               | I     |
| Glutaraldehyde                                      | 111308               | IV    |
| Glyceraldehyde                                      | 367475               | V     |
| Glycerol  | 56815                | II    |
| Glycine   | 56406                | II    |
| Glyoxal   | 107222               | II    |
| Hexachlorobenzene                                   | 118741               | II    |
| Hexachlorobutadiene                                 | 87683                | II    |
| Hexachloroethane                                    | 67721                | II    |
| Hexadiene (1,4-)                                    | 592450               | II    |
| Hexamethylene-tetramine.                            | 100970               | I     |
| Hexane  | 110543               | V     |
| Hexanetriol (1,2,6-)                                | 106694               | IV    |
| Hydroquinone  | 123319               | I     |
| Hydroxyadipaldehyde                                 | 141311               | V     |
| Isobutyl acrylate                                   | 106638               | V     |
| Isobutylene   | 115117               | V     |
| Isophorone  | 78591                | IV    |
| Isophorone nitrile                                  | 0017                 | V     |
| Isophthalic acid                                    | 121915               | III   |

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TABLE 1 TO SUBPART F—SYNTHETIC ORGANIC CHEMICAL MANUFACTURING INDUSTRY CHEMICALS—Continued

| Chemical name <sup>a</sup>                          | CAS No. <sup>b</sup> | Group |
|---|----------------------|-------|
| Isopropylphenol .....                               | 25168063             | III   |
| Linear alkylbenzene .....                           | ..... d              | I     |
| Maleic anhydride .....                              | 108316               | I     |
| Maleic hydrazide .....                              | 123331               | I     |
| Malic acid .....                                    | 6915157              | I     |
| Metanilic acid .....                                | 121471               | I     |
| Methacrylic acid .....                              | 79414                | V     |
| Methanol .....                                      | 67561                | IV    |
| Methionine .....                                    | 63683                | I     |
| Methyl acetate .....                                | 79209                | IV    |
| Methyl acrylate .....                               | 96333                | V     |
| Methyl bromide (Bromomethane) .....                 | 74839                | IV    |
| Methyl chloride (Chloromethane) .....               | 74873                | IV    |
| Methyl ethyl ketone (2-butanone) .....              | 78933                | V     |
| Methyl formate .....                                | 107313               | II    |
| Methyl hydrazine .....                              | 60344                | IV    |
| Methyl isobutyl carbinol .....                      | 108112               | IV    |
| Methyl isobutyl ketone (Hexone) .....               | 108101               | IV    |
| Methyl isocyanate .....                             | 624839               | IV    |
| Methyl mercaptan .....                              | 74931                | IV    |
| Methyl methacrylate .....                           | 80626                | IV    |
| Methyl phenyl carbinol .....                        | 98851                | II    |
| Methyl tert-butyl ether .....                       | 1634044              | V     |
| Methylamine .....                                   | 74895                | IV    |
| Methylaniline (N-) .....                            | 100618               | III   |
| Methylcyclohexane .....                             | 108872               | III   |
| Methylcyclohexanol .....                            | 25639423             | V     |
| Methylcyclohexanone .....                           | 1331222              | III   |
| Methylene chloride (Dichloromethane) .....          | 75092                | I     |
| Methylene dianiline (4,4'-isomer) .....             | 101779               | I     |
| Methylene diphenyl diisocyanate (4,4'-) (MDI) ..... | 101688               | III   |
| Methylenes (a-) .....                               | 79696                | V     |
| Methylpentynol .....                                | 77758                | V     |
| Methylstyrene (a-) .....                            | 98839                | I     |
| Naphthalene .....                                   | 91203                | IV    |
| Naphthalene sulfonic acid (a-) .....                | 85472                | IV    |
| Naphthalene sulfonic acid (b-) .....                | 120183               | IV    |
| Naphthol (a-) .....                                 | 90153                | IV    |
| Naphthol (b-) .....                                 | 135193               | IV    |
| Naphtholsulfonic acid (1-) .....                    | 567180               | V     |
| Naphthylamine sulfonic acid (1,4-) .....            | 84866                | V     |
| Naphthylamine sulfonic acid (2,1-) .....            | 81163                | V     |
| Naphthylamine (1-) .....                            | 134327               | V     |
| Naphthylamine (2-) .....                            | 91598                | V     |
| Nitroaniline (m-) .....                             | 99092                | II    |
| Nitroaniline (o-) .....                             | 88744                | I     |
| Nitroanisole (o-) .....                             | 91236                | III   |
| Nitroanisole (p-) .....                             | 100174               | III   |
| Nitrobenzene .....                                  | 98953                | I     |
| Nitronaphthalene (1-) .....                         | 86577                | IV    |
| Nitrophenol (p-) .....                              | 100027               | III   |
| Nitrophenol (o-) .....                              | 88755                | III   |
| Nitropropane (2-) .....                             | 79469                | II    |
| Nitrotoluene (all isomers) .....                    | 1321126              | III   |
| Nitrotoluene (o-) .....                             | 88722                | III   |
| Nitrotoluene (m-) .....                             | 99081                | III   |
| Nitrotoluene (p-) .....                             | 99990                | III   |
| Nitroxylene .....                                   | 25168041             | V     |
| Nonylbenzene (branched) .....                       | 1081772              | V     |
| Nonylphenol .....                                   | 25154523             | V     |
| Octene-1 .....                                      | 111660               | I     |
| Octylphenol .....                                   | 27193288             | III   |
| Parafomaldehyde .....                               | 30525894             | I     |
| Paraldehyde .....                                   | 123637               | II    |
| Pentachlorophenol .....                             | 87865                | III   |
| Pentaerythritol .....                               | 115775               | I     |
| Peracetic acid .....                                | 79210                | I     |
| Perchloromethyl mercaptan .....                     | 594423               | IV    |

TABLE 1 TO SUBPART F—SYNTHETIC ORGANIC CHEMICAL MANUFACTURING INDUSTRY CHEMICALS—Continued

| Chemical name <sup>a</sup>                       | CAS No. <sup>b</sup> | Group |
|--|----------------------|-------|
| Phenanthrene .....                               | 85018                | V     |
| Phenetidine (p-) .....                           | 156434               | III   |
| Phenol .....                                     | 108952               | III   |
| Phenolphthalein .....                            | 77098                | III   |
| Phenolsulfonic acids (all isomers) .....         | 1333397              | III   |
| Phenyl anthranilic acid (all isomers) .....      | 91407                | III   |
| Phenylenediamine (p-) .....                      | 106503               | I     |
| Phloroglucinol .....                             | 108736               | III   |
| Phosgene .....                                   | 75445                | IV    |
| Phthalic acid .....                              | 88993                | III   |
| Phthalic anhydride .....                         | 85449                | III   |
| Phthalimide .....                                | 85416                | III   |
| Phthalonitrile .....                             | 91156                | III   |
| Picoline (b-) .....                              | 108996               | II    |
| Piperazine .....                                 | 110850               | I     |
| Propiolactone (beta-) .....                      | 57578                | I     |
| Propionaldehyde .....                            | 123386               | IV    |
| Propionic acid .....                             | 79094                | I     |
| Propylene carbonate .....                        | 108327               | V     |
| Propylene dichloride (1,2-dichloropropane) ..... | 78875                | IV    |
| Propylene glycol .....                           | 57556                | I     |
| Propylene glycol monomethyl ether .....          | 107982               | I     |
| Propylene oxide .....                            | 75569                | I     |
| Pyrene .....                                     | 129000               | V     |
| Pyridine .....                                   | 110861               | II    |
| p-tert-Butyl toluene .....                       | 98511                | III   |
| Quinone .....                                    | 106514               | III   |
| Resorcinol .....                                 | 108463               | I     |
| Salicylic acid .....                             | 69727                | III   |
| Sodium methoxide .....                           | 124414               | IV    |
| Sodium phenate .....                             | 139026               | III   |
| Stilbene .....                                   | 588590               | III   |
| Styrene .....                                    | 100425               | I     |
| Succinic acid .....                              | 110156               | I     |
| Succinonitrile .....                             | 110612               | I     |
| Sulfanilic acid .....                            | 121573               | III   |
| Sulfolane .....                                  | 126330               | II    |
| Tartaric acid .....                              | 526830               | I     |
| Terephthalic acid .....                          | 100210               | II    |
| Tetrabromophthalic anhydride .....               | 632791               | III   |
| Tetrachlorobenzene (1,2,4,5-) .....              | 95943                | I     |
| Tetrachloroethane (1,1,2,2-) .....               | 79345                | II    |
| Tetrachloroethylene (Perchloroethylene) .....    | 127184               | I     |
| Tetrachlorophthalic anhydride .....              | 117088               | III   |
| Tetraethyl lead .....                            | 78002                | IV    |
| Tetraethylene glycol .....                       | 112607               | I     |
| Tetraethylene-pentamine .....                    | 112572               | V     |
| Tetrahydrofuran .....                            | 109999               | I     |
| Tetrahydronaphthalene .....                      | 119642               | IV    |
| Tetrahydrophthalic anhydride .....               | 85438                | II    |
| Tetramethylene-diamine .....                     | 110601               | II    |
| Tetramethylethylenediamine .....                 | 110189               | V     |
| Tetramethyllead .....                            | 75741                | V     |
| Toluene .....                                    | 108883               | I     |
| Toluene 2,4 diamine .....                        | 95807                | II    |
| Toluene 2,4 diisocyanate .....                   | 584849               | II    |
| Toluene diisocyanates (mixture) .....            | 26471625             | III   |
| Toluene sulfonic acids .....                     | 104154               | III   |
| Toluenesulfonyl chloride .....                   | 98599                | III   |
| Toluidine (o-) .....                             | 95534                | II    |
| Trichloroaniline- (2,4,6-) .....                 | 634935               | III   |
| Trichlorobenzene (1,2,3-) .....                  | 87616                | V     |
| Trichlorobenzene (1,2,4-) .....                  | 120821               | I     |
| Trichloroethane .....                            | 71556                | II    |

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TABLE 1 TO SUBPART F—SYNTHETIC ORGANIC CHEMICAL MANUFACTURING INDUSTRY CHEMICALS—Continued

| Chemical name <sup>a</sup>                                     | CAS No. <sup>b</sup> | Group |
|--|----------------------|-------|
| (1,1,1-)<br>Trichloroethane (1,1,2-) (Vinyl tri-<br>chloride). | 79005                | II    |
| Trichloroethylene  | 79016                | I     |
| Trichlorofluoromethane   | 75694                | I     |
| Trichlorophenol<br>(2,4,5-)                                    | 95954                | I     |
| (1,1,2-) Trichloro<br>(1,2,2-) trifluoroethane.                | 76131                | I     |
| Triethanolamine  | 102716               | I     |
| Triethylamine  | 121448               | IV    |
| Triethylene glycol   | 112276               | I     |
| Triethylene glycol<br>dimethyl ether.                          | 112492               | I     |
| Triethylene glycol monoethyl ether ...                         | 112505               | V     |
| Triethylene glycol monomethyl ether                            | 112356               | I     |
| Trimethylamine   | 75503                | IV    |
| Trimethylcyclohexanol  | 933482               | IV    |
| Trimethylcyclo-<br>hexanone.                                   | 2408379              | IV    |
| Trimethylcyclo-<br>hexylamine.                                 | 34216347             | V     |
| Trimethylolpropane   | 77996                | I     |
| Trimethylpentane (2,2,4-)                                      | 540841               | V     |
| Tripropylene glycol  | 24800440             | V     |
| Vinyl acetate  | 108054               | II    |
| Vinyl chloride (Chloroethylene)                                | 75014                | I     |
| Vinyl toluene  | 25013154             | III   |
| Vinylcyclohexene (4-)  | 100403               | II    |
| Vinylidene chloride<br>(1,1-dichloroethylene).                 | 75354                | II    |
| Vinyl(N)-pyrrolidone(2-)                                       | 88120                | V     |
| Xanthates  | 140896               | V     |
| Xylene sulfonic acid   | 25321419             | III   |
| Xylenes (NOS) <sup>c</sup>                                     | 1330207              | I     |
| Xylene (m-)  | 108383               | I     |
| Xylene (o-)  | 95476                | I     |
| Xylene (p-)  | 106423               | I     |
| Xylenols (Mixed)   | 1300716              | V     |
| Xylidene   | 1300738              | III   |

<sup>a</sup> Isomer means all structural arrangements for the same number of atoms of each element and does not mean salts, esters, or derivatives.

<sup>b</sup> CAS Number = Chemical Abstract Service number.

<sup>c</sup> NOS = not otherwise specified.

<sup>d</sup> No CAS number assigned.

[59 FR 19454, Apr. 22, 1994, as amended at 59 FR 48176, Sept. 20, 1994; 61 FR 31439, June 20, 1996]

TABLE 2 TO SUBPART F—ORGANIC HAZARDOUS AIR POLLUTANTS

| Chemical name <sup>a,b</sup> | CAS No. <sup>c</sup> |
|------------------------------|----------------------|
| Acetaldehyde                 | 75070                |
| Acetamide                    | 60355                |
| Acetonitrile                 | 75058                |
| Acetophenone                 | 98862                |
| Acrolein                     | 107028               |
| Acrylamide                   | 79061                |
| Acrylic acid                 | 79107                |
| Acrylonitrile                | 107131               |
| Allyl chloride               | 107051               |
| Aniline                      | 62533                |
| Anisidine (o-)               | 90040                |
| Benzene                      | 71432                |
| Benzotrichloride             | 98077                |

TABLE 2 TO SUBPART F—ORGANIC HAZARDOUS AIR POLLUTANTS—Continued

| Chemical name <sup>a,b</sup>                          | CAS No. <sup>c</sup> |
|---|----------------------|
| Benzyl chloride                                       | 100447               |
| Biphenyl  | 92524                |
| Bis(chloromethyl)ether                                | 542881               |
| Bromoform   | 75252                |
| Butadiene (1,3-)                                      | 106990               |
| Caprolactam   | 105602               |
| Carbon disulfide                                      | 75150                |
| Carbon tetrachloride                                  | 56235                |
| Chloroacetic acid                                     | 79118                |
| Chloroacetophenone (2-)                               | 532274               |
| Chlorobenzene   | 108907               |
| 2-Chloro-1,3-butadiene (Chloroprene)                  | 126998               |
| Chloroform  | 67663                |
| Cresols and cresylic acids (mixed)                    | 1319773              |
| Cresol and cresylic acid (o-)                         | 95487                |
| Cresol and cresylic acid (m-)                         | 108394               |
| Cresol and cresylic acid (p-)                         | 106445               |
| Cumene  | 98828                |
| Dichlorobenzene (p-)                                  | 106467               |
| Dichlorobenzidine (3,3'-)                             | 91941                |
| Dichloroethane (1,2-) (Ethylene dichloride)<br>(EDC). | 107062               |
| Dichloroethylether<br>(Bis(2-chloroethyl)<br>ether).  | 111444               |
| Dichloropropene (1,3-)                                | 542756               |
| Diethanolamine (2,2'-<br>Iminodiethanol).             | 111422               |
| Dimethylaniline (N,N-)                                | 121697               |
| Diethyl sulfate                                       | 64675                |
| Dimethylbenzidine (3,3'-)                             | 119937               |
| Dimethylformamide (N,N-)                              | 68122                |
| Dimethylhydrazine (1,1-)                              | 57147                |
| Dimethyl phthalate                                    | 131113               |
| Dimethyl sulfate                                      | 77781                |
| Dinitrophenol (2,4-)                                  | 51285                |
| Dinitrotoluene (2,4-)                                 | 121142               |
| Dioxane (1,4-)(1,4-<br>Diethyleneoxide).              | 123911               |
| 1,2-Diphenylhydrazine                                 | 122667               |
| Epichlorohydrin (1-Chloro-2,3-epoxypropane)           | 106898               |
| Ethyl acrylate  | 140885               |
| Ethylbenzene  | 100414               |
| Ethyl chloride (Chloroethane)                         | 75003                |
| Ethylene dibromide<br>(Dibromoethane).                | 106934               |
| Ethylene glycol                                       | 107211               |
| Ethylene oxide  | 75218                |
| Ethylidene dichloride<br>(1,1-Dichloroethane).        | 75343                |
| Formaldehyde  | 50000                |
| Glycol ethers <sup>d</sup>                            |                      |
| Hexachlorobenzene                                     | 118741               |
| Hexachlorobutadiene                                   | 87683                |
| Hexachloroethane                                      | 67721                |
| Hexane  | 110543               |
| Hydroquinone  | 123319               |
| Isophorone  | 78591                |
| Maleic anhydride                                      | 108316               |
| Methanol  | 67561                |
| Methyl bromide (Bromomethane)                         | 74839                |
| Methyl chloride (Chloromethane)                       | 74873                |
| Methyl ethyl ketone<br>(2-Butanone).                  | 78933                |
| Methyl hydrazine                                      | 60344                |
| Methyl isobutyl ketone (Hexone)                       | 108101               |
| Methyl isocyanate                                     | 624839               |
| Methyl methacrylate                                   | 80626                |
| Methyl tert-butyl ether                               | 1634044              |
| Methylene chloride (Dichloromethane)                  | 75092                |
| Methylene diphenyl diisocyanate (4,4'-) (MDI)         | 101688               |

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TABLE 2 TO SUBPART F—ORGANIC HAZARDOUS AIR POLLUTANTS—Continued

| Chemical name <sup>a,b</sup>                | CAS No. <sup>c</sup> |
|---|----------------------|
| Methylenedianiline (4,4'-)                  | 101779               |
| Naphthalene                                 | 91203                |
| Nitrobenzene                                | 98953                |
| Nitrophenol (p-)                            | 100027               |
| Nitropropane (2-)                           | 79469                |
| Phenol                                      | 108952               |
| Phenylenediamine (p-)                       | 106503               |
| Phosgene                                    | 75445                |
| Phthalic anhydride                          | 85449                |
| Polycyclic organic matter <sup>e</sup>      |                      |
| Propiolactone (beta-)                       | 57578                |
| Propionaldehyde                             | 123386               |
| Propylene dichloride (1,2-Dichloropropane). | 78875                |
| Propylene oxide                             | 75569                |
| Quinone                                     | 106514               |
| Styrene                                     | 100425               |
| Tetrachloroethane (1,1,2,2-)                | 79345                |
| Tetrachloroethylene (Perchloroethylene)     | 127184               |
| Toluene                                     | 108883               |
| Toluene diamine (2,4-)                      | 95807                |
| Toluene diisocyanate (2,4-)                 | 584849               |
| Toluidine (o-)                              | 95534                |
| Trichlorobenzene (1,2,4-)                   | 120821               |
| Trichloroethane (1,1,1- (Methyl chloroform) | 71556                |
| Trichloroethane (1,1,2- (Vinyl trichloride) | 79005                |
| Trichloroethylene                           | 79016                |
| Trichlorophenol (2,4,5-)                    | 95954                |
| Triethylamine                               | 121448               |
| Trimethylpentane (2,2,4-)                   | 540841               |

TABLE 2 TO SUBPART F—ORGANIC HAZARDOUS AIR POLLUTANTS—Continued

| Chemical name <sup>a,b</sup>                | CAS No. <sup>c</sup> |
|---|----------------------|
| Vinyl acetate                               | 108054               |
| Vinyl chloride (chloroethylene)             | 75014                |
| Vinylidene chloride (1,1-Dichloroethylene). | 75354                |
| Xylenes (NOS)                               | 1330207              |
| Xylene (m-)                                 | 108383               |
| Xylene (o-)                                 | 95476                |
| Xylene (p-)                                 | 106423               |

<sup>a</sup>For all listings above containing the word "Compounds" and for glycol ethers, the following applies: Unless otherwise specified, these listings are defined as including any unique chemical substance that contains the named chemical (i.e., antimony, arsenic) as part of that chemical's infrastructure.

<sup>b</sup>Isomer means all structural arrangements for the same number of atoms of each element and does not mean salts, esters, or derivatives.

<sup>c</sup>CAS Number=Chemical Abstract Service number.

<sup>d</sup>Includes mono- and di- ethers of ethylene glycol, diethylene glycol, and triethylene glycol R-(OCH<sub>2</sub>CH<sub>2</sub>)<sub>n</sub>-OR' where:

n=1, 2, or 3;

R=alkyl or aryl groups; and

R'=R, H, or groups which, when removed, yield glycol ethers with the structure: R-(OCH<sub>2</sub>CH<sub>2</sub>)<sub>n</sub>-OH

Polymers are excluded from the glycol category.

<sup>e</sup>includes organic compounds with more than one benzene ring, and which have a boiling point greater than or equal to 100 °C.

[59 FR 19454, Apr. 22, 1994, as amended at 59 FR 48176, Sept. 20, 1994]

TABLE 3 TO SUBPART F—GENERAL PROVISIONS APPLICABILITY TO SUBPARTS F, G, AND H <sup>a</sup>

| Reference           | Applies to Subparts F, G, and H | Comment   |
|---------------------|---------------------------------|---|
| 63.1(a)(1)          | Yes                             | Overlap clarified in §63.101, §63.111, §63.161.   |
| 63.1(a)(2)          | Yes.                            |   |
| 63.1(a)(3)          | Yes                             | §63.110 and §63.160(b) of subparts G and H identify which standards are overridden.   |
| 63.1(a)(4)          | No                              | Subpart F specifies applicability of each paragraph in subpart A to subparts F, G, and H.   |
| 63.1(a)(5)–(a)(9)   | No.                             |   |
| 63.1(a)(10)         | No                              | Subparts F, G, and H specify calendar or operating day.   |
| 63.1(a)(11)         | No                              | Subpart F §63.103(d) specifies acceptable methods for submitting reports <sup>a</sup> .   |
| 63.1(a)(12)–(a)(14) | Yes.                            |   |
| 63.1(b)(1)          | No                              | Subpart F specifies applicability.  |
| 63.1(b)(2)          | Yes.                            |   |
| 63.1(b)(3)          | No.                             |   |
| 63.1(c)(1)          | No                              | Subpart F specifies applicability.  |
| 63.1(c)(2)          | No                              | Area sources are not subject to subparts F, G, and H.   |
| 63.1(c)(3)          | No.                             |   |
| 63.1(c)(4)          | Yes.                            |   |
| 63.1(c)(5)          | No                              | Subparts G and H specify applicable notification requirements.  |
| 63.1(d)             | No.                             |   |
| 63.1(e)             | No                              | Subparts F, G, and H established before permit program.   |
| 63.2                | Yes                             | Subpart F §63.103 specifies those subpart A definitions that apply to the HON. Subpart F definition of "source" is equivalent to subpart A definition of "affected source". |
| 63.3                | No                              | Units of measure are spelled out in subparts F, G, and H.   |
| 63.4(a)(1)–(a)(3)   | Yes.                            |   |
| 63.4(a)(4)          | No.                             |   |
| 63.4(a)(5)          | Yes.                            |   |
| 63.4(b)             | Yes.                            |   |

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TABLE 3 TO SUBPART F—GENERAL PROVISIONS APPLICABILITY TO SUBPARTS F, G, AND H<sup>a</sup>—  
Continued

| Reference                               | Applies to Subparts F, G, and H | Comment   |
|---|---------------------------------|---|
| 63.4(c) .....                           | Yes.                            |   |
| 63.5(a)(1) .....                        | Yes .....                       | Except replace term "source" and "stationary source" in § 63.5(a)(1) of subpart A with "affected source".   |
| 63.5(a)(2) .....                        | Yes.                            |   |
| 63.5(b)(1) .....                        | Yes.                            |   |
| 63.5(b)(2) .....                        | No.                             |   |
| 63.5(b)(3) .....                        | Yes.                            |   |
| 63.5(b)(4) .....                        | Yes .....                       | Except the cross reference to § 63.9(b) is changed to § 63.9(b) (4) and (5). Subpart F overrides § 63.9 (b)(2) and (b)(3).  |
| 63.5(b)(5) .....                        | Yes.                            |   |
| 63.5(b)(6) .....                        | Yes.                            |   |
| 63.5(c) .....                           | No.                             |   |
| 63.5(d)(1)(i) .....                     | No .....                        | Subpart G § 63.151(b) (2)(ii) and (2)(iii) specify the applicability and timing of this submittal for sources subject to subpart G.   |
| 63.5(d)(1)(ii) .....                    | Yes .....                       |   |
| 63.5(d)(1)(iii) .....                   | No.                             | Subpart G requires submittal of the notification of compliance status in § 63.152(b).   |
| 63.5(d)(2) .....                        | No.                             |   |
| 63.5(d)(3) .....                        | Yes .....                       | Except § 63.5(d)(3)(ii) does not apply to subpart G.  |
| 63.5(d)(4) .....                        | Yes.                            |   |
| 63.5(e) .....                           | Yes.                            |   |
| 63.5(f)(1) .....                        | Yes.                            |   |
| 63.5(f)(2) .....                        | Yes.                            |   |
| 63.5(f)(3) .....                        | Yes .....                       | Except the cross-reference to § 63.5(d)(1) is changed to § 63.151(b)(ii) of subpart G, and the cross-reference to (b)(2) does not apply.  |
| 63.5(f)(4) .....                        | Yes.                            |   |
| 63.6(a) .....                           | Yes.                            |   |
| 63.6(b)(1) .....                        | No .....                        | Subparts F and H specify compliance dates for sources subject to subparts F, G, and H.  |
| 63.6(b)(2) .....                        | No.                             |   |
| 63.6(b)(3) .....                        | Yes.                            |   |
| 63.6(b)(4) .....                        | No .....                        | May apply when standards are proposed under section 112(f) of the Act.  |
| 63.6(b)(5) .....                        | No .....                        |   |
| 63.6(b)(6) .....                        | No.                             |   |
| 63.6(b)(7) .....                        | No.                             |   |
| 63.6(c)(1) .....                        | No .....                        | Subpart F specifies the compliance date.  |
| 63.6(c)(2) .....                        | No.                             |   |
| 63.6(c)(3) .....                        | No.                             |   |
| 63.6(c)(4) .....                        | No.                             |   |
| 63.6(c)(5) .....                        | Yes.                            |   |
| 63.6(d) .....                           | No.                             |   |
| 63.6(e) .....                           | Yes .....                       | Does not apply to Group 2 emission points unless they are included in an emissions average <sup>b</sup> . For subpart H, the startup, shutdown, and malfunction plan requirement of § 63.6(e)(3) is limited to control devices subject to the provisions of subpart H and is optional for other equipment subject to subpart H. The startup, shutdown, and malfunction plan may include written procedures that identify conditions that justify a delay of repair. |
| 63.6(f)(1) .....                        | No .....                        |   |
| 63.6(f)(2)(i) .....                     | Yes.                            | § 63.102(a) of subpart F specifies when the standards apply.  |
| 63.6(f)(2)(ii) .....                    | Yes .....                       |   |
| 63.6(f)(2)(iii) (A), (B), and (C) ..... | Yes.                            | § 63.151(c)(2) of subpart G specifies the use of monitoring data in determining compliance with subpart G.  |
| 63.6(f)(2)(iii)(D) .....                | No.                             |   |
| 63.6(f)(2)(iv) .....                    | Yes.                            |   |

TABLE 3 TO SUBPART F—GENERAL PROVISIONS APPLICABILITY TO SUBPARTS F, G, AND H<sup>a</sup>—  
Continued

| Reference               | Applies to Subparts F, G, and H | Comment   |
|-------------------------|---------------------------------|---|
| 63.6(f)(2)(v) .....     | Yes.                            |   |
| 63.6(f)(3) .....        | Yes.                            |   |
| 63.6(g) .....           | No .....                        | Procedures specified in §63.102(b) of subpart F.  |
| 63.6(h) .....           | No.                             |   |
| 63.6(i)(1) .....        | Yes.                            |   |
| 63.6(i)(2) .....        | Yes.                            |   |
| 63.6(i)(3) .....        | No .....                        | § 63.151(a)(6) of subpart G specifies procedures.   |
| 63.6(i)(4)(i)(A) .....  | Yes.                            |   |
| 63.6(i)(4)(i)(B) .....  | No .....                        | Dates are specified in §63.151(a)(6) of subpart G.  |
| 63.6(i)(4)(ii) .....    | No.                             |   |
| 63.6(i)(5)—(14) .....   | Yes.                            |   |
| 63.6(i)(15) .....       | No.                             |   |
| 63.6(i)(16) .....       | Yes.                            |   |
| 63.6(j) .....           | Yes.                            |   |
| 63.7(a)(1) .....        | No .....                        | Subparts F, G, and H specify required testing and compliance demonstration procedures.  |
| 63.7(a)(2) .....        | No .....                        | Test results must be submitted in the notification of compliance status due 150 days after compliance date, as specified in §63.152(b) of subparts G and H. |
| 63.7(a)(3) .....        | Yes.                            |   |
| 63.7(b) .....           | No.                             |   |
| 63.7(c) .....           | No.                             |   |
| 63.7(d) .....           | Yes.                            |   |
| 63.7(e)(1) .....        | Yes.                            |   |
| 63.7(e)(2) .....        | Yes.                            |   |
| 63.7(e)(3) .....        | No .....                        | Subparts F, G, and H specify test methods and procedures.   |
| 63.7(e)(4) .....        | Yes.                            |   |
| 63.7(f) .....           | No .....                        | Subparts F, G, and H specify applicable methods and provide alternatives.   |
| 63.7(g) .....           | No .....                        | Performance test reporting specified in §63.152(b) of subparts G and H.   |
| 63.7(h)(1) .....        | Yes.                            |   |
| 63.7(h)(2) .....        | Yes.                            |   |
| 63.7(h)(3) .....        | No .....                        | §63.103(b)(5) of subpart F specifies provisions for requests to waive performance tests.  |
| 63.7(h)(4) .....        | No.                             |   |
| 63.7(h)(5) .....        | Yes.                            |   |
| 63.8(a)(1) .....        | Yes.                            |   |
| 63.8(a)(2) .....        | No.                             |   |
| 63.8(a)(3) .....        | No.                             |   |
| 63.8(a)(4) .....        | Yes.                            |   |
| 63.8(b)(1) .....        | Yes.                            |   |
| 63.8(b)(2) .....        | No .....                        | Subparts G and H specify locations to conduct monitoring.   |
| 63.8(b)(3) .....        | Yes.                            |   |
| 63.8(c)(1)(i) .....     | Yes.                            |   |
| 63.8(c)(1)(ii) .....    | No .....                        | Addressed by periodic reports in §63.152(c) of subpart G.   |
| 63.8(c)(1)(iii) .....   | Yes.                            |   |
| 63.8(c)(2) .....        | Yes.                            |   |
| 63.8(c)(3) .....        | Yes.                            |   |
| 63.8(c)(4) .....        | No .....                        | HON specifies monitoring frequency in §63.111 and §63.152(f) of subpart G.  |
| 63.8(c)(5)—(c)(8) ..... | No.                             |   |
| 63.8(d) .....           | No.                             |   |
| 63.8(e) .....           | No.                             |   |
| 63.8(f)(1)—(f)(3) ..... | Yes.                            |   |
| 63.8(f)(4)(i) .....     | No .....                        | Timeframe for submitting request specified in §63.152(g)(1) of subpart G.   |
| 63.8(f)(4)(ii) .....    | Yes.                            |   |
| 63.8(f)(4)(iii) .....   | No.                             |   |
| 63.8(f)(5)(i) .....     | Yes.                            |   |
| 63.8(f)(5)(ii) .....    | No.                             |   |
| 63.8(f)(5)(iii) .....   | Yes.                            |   |
| 63.8(f)(6) .....        | No .....                        | Subparts G and H do not require CEM's.  |
| 63.8(g) .....           | No .....                        | Data reduction procedures specified in §63.152(f) of subpart G.   |

TABLE 3 TO SUBPART F—GENERAL PROVISIONS APPLICABILITY TO SUBPARTS F, G, AND H<sup>a</sup>—  
Continued

| Reference             | Applies to Subparts F, G, and H | Comment  |
|-----------------------|---------------------------------|--|
| 63.9(a) .....         | Yes.                            |  |
| 63.9(b)(1)(i) .....   | No .....                        | Specified in §63.151(b)(2)(ii) of subpart G.   |
| 63.9(b)(1)(ii) .....  | No.                             |  |
| 63.9(b)(2) .....      | No .....                        | Initial notification provisions are specified in §63.151(b) of subpart G.  |
| 63.9(b)(3) .....      | No.                             |  |
| 63.9(b)(4) .....      | Yes .....                       | Except that the notification in §63.9(b)(4)(i) shall be submitted at the time specified in §63.151(b)(2)(ii) of subpart G. |
| 63.9(b)(5) .....      | Yes .....                       | Except that the notification in §63.9(b)(5) shall be submitted at the time specified in §63.151(b)(2)(ii) of subpart G.    |
| 63.9(c) .....         | Yes.                            |  |
| 63.9(d) .....         | Yes.                            |  |
| 63.9(e) .....         | No.                             |  |
| 63.9(f) .....         | No.                             |  |
| 63.9(g) .....         | No.                             |  |
| 63.9(h) .....         | No .....                        | §63.152(b) of subpart G specifies notification of compliance status requirements.  |
| 63.9(i) .....         | Yes.                            |  |
| 63.9(j) .....         | No.                             |  |
| 63.10(a) .....        | Yes.                            |  |
| 63.10(b)(1) .....     | No .....                        | §63.103(c) of subpart F specifies record retention requirements.   |
| 63.10(b)(2) .....     | No .....                        | §63.103(c) of subpart F specifies required records.  |
| 63.10(b)(3) .....     | No.                             |  |
| 63.10(c) .....        | No.                             |  |
| 63.10(d)(1) .....     | No.                             |  |
| 63.10(d)(2) .....     | No .....                        | §63.152(b) of subpart F specifies performance test reporting.  |
| 63.10(d)(3) .....     | No.                             |  |
| 63.10(d)(4) .....     | Yes.                            |  |
| 63.10(d)(5)(i) .....  | Yes .....                       | Except that reports required by §63.10(d)(5)(i) shall be submitted at the time specified in §63.152(c) of subpart G.       |
| 63.10(d)(5)(ii) ..... | Yes.                            |  |
| 63.10(e) .....        | No.                             |  |
| 63.10(f) .....        | Yes.                            |  |
| 63.11–63.15 .....     | Yes.                            |  |

<sup>a</sup> Wherever subpart A specifies "postmark" dates, submittals may be sent by methods other than the U.S. Mail (e.g., by fax or courier). Submittals shall be sent by the specified dates, but a postmark is not necessarily required.  
<sup>b</sup> The plan, and any records or reports of start-up, shutdown, and malfunction do not apply to Group 2 emission points unless they are included in an emissions average.

[59 FR 19454, Apr. 22, 1994, as amended at 60 FR 18029, Apr. 10, 1995]

**Subpart G—National Emission Standards for Organic Hazardous Air Pollutants From the Synthetic Organic Chemical Manufacturing Industry for Process Vents, Storage Vessels, Transfer Operations, and Wastewater**

SOURCE: 59 FR 19468, Apr. 22, 1994, unless otherwise noted.

**§63.110 Applicability.**

(a) This subpart applies to all process vents, storage vessels, transfer racks, and wastewater streams within a source subject to subpart F of this part.

(b) *Overlap with other regulations for storage vessels.* (1) After the compliance dates specified in §63.100 of subpart F of this part, a Group 1 or Group 2 storage vessel that is also subject to the provisions of 40 CFR part 60, subpart Kb is required to comply only with the provisions of this subpart.

(2) After the compliance dates specified in §63.100 of subpart F of this part, a Group 1 storage vessel that is also

subject to the provisions of 40 CFR part 61, subpart Y is required to comply only with the provisions of this subpart.

(3) After the compliance dates specified in § 63.100 of subpart F of this part, a Group 2 storage vessel that is also subject to the provisions of 40 CFR part 61, subpart Y is required to comply only with the provisions of 40 CFR part 61, subpart Y. The recordkeeping and reporting requirements of 40 CFR part 61, subpart Y will be accepted as compliance with the recordkeeping and reporting requirements of this subpart.

(c) *Overlap with other regulations for transfer racks.* (1) After the compliance dates specified in § 63.100 of subpart F of this part, a Group 1 transfer rack that is also subject to the provisions of 40 CFR part 61, subpart BB is required to comply only with the provisions of this subpart.

(2) After the compliance dates specified in § 63.100 of subpart F of this part, a Group 2 transfer rack that is also subject to the provisions of 40 CFR part 61, subpart BB is required to comply with the provisions of either paragraph (c)(2)(i) or (c)(2)(ii) of this subpart.

(i) If the transfer rack is subject to the control requirements specified in § 61.302 of 40 CFR part 61, subpart BB, then the transfer rack is required to comply with the control requirements of § 61.302 of 40 CFR part 61, subpart BB. The owner or operator may elect to comply with either the associated testing, monitoring, reporting, and recordkeeping requirements of 40 CFR part 61, subpart BB or with the testing, monitoring, recordkeeping, and reporting requirements specified in this subpart for Group 1 transfer racks. The owner or operator shall indicate this decision in either the Notification of Compliance Status specified in § 63.152(b) of this subpart or in an operating permit application or amendment.

(ii) If the transfer rack is subject only to reporting and recordkeeping requirements under 40 CFR part 61, subpart BB, then the transfer rack is required to comply only with the reporting and recordkeeping requirements specified in this subpart for Group 2 transfer racks and is exempt from the

reporting and recordkeeping requirements in 40 CFR part 61, subpart BB.

(d) *Overlap with other regulations for process vents.* (1) After the compliance dates specified in § 63.100 of subpart F of this part, a Group 1 process vent that is also subject to the provisions of 40 CFR part 60, subpart III is required to comply only with the provisions of this subpart.

(2) After the compliance dates specified in § 63.100 of subpart F of this part, the owner or operator of a Group 2 process vent that is also subject to the provisions of 40 CFR part 60, subpart III shall determine requirements according to paragraphs (d)(2)(i) and (d)(2)(ii) of this section.

(i) If the Group 2 process vent has a TRE value less than 1 as determined by the procedures in 40 CFR part 60, subpart III, the process vent is required to comply with the provisions in paragraphs (d)(2)(i)(A) through (d)(2)(i)(C) of this section.

(A) The provisions in both this subpart and in 40 CFR part 60, subpart III for applicability determination and the associated recordkeeping and reporting;

(B) The provisions in both this subpart and in 40 CFR part 60, subpart III for process changes and recalculation of the TRE index value and the associated recordkeeping and reporting; and

(C) The control requirements in § 60.612 of 40 CFR part 60, subpart III. The owner or operator may elect to comply with either the associated testing, monitoring, reporting, and recordkeeping requirements of 40 CFR part 60, subpart III or with the testing, monitoring, reporting, and recordkeeping requirements specified in this subpart for Group 1 process vents. The owner or operator shall indicate this decision in either the Notification of Compliance Status specified in § 63.152(b) of this subpart or in an operating permit application or amendment.

(ii) If the Group 2 process vent has a TRE value greater than or equal to 1 as determined by the procedures in 40 CFR part 60, subpart III, the process vent is required to comply only with the provisions specified in paragraphs (d)(2)(ii)(A) through (d)(2)(ii)(D) of this section.

(A) The provisions in both this subpart and in 40 CFR part 60, subpart III for applicability determination and the associated recordkeeping and reporting;

(B) The provisions in both this subpart and in 40 CFR part 60, subpart III for process changes and recalculation of the TRE index value and the associated recordkeeping and reporting;

(C) If the provisions of both this subpart and 40 CFR part 60, subpart III require continuous monitoring of recovery device operating parameters, the process vent is required to comply only with the provisions that are specified in this subpart for continuous monitoring of recovery device operating parameters and the associated testing, reporting, and recordkeeping.

(D) If only the provisions of 40 CFR part 60, subpart III require continuous monitoring of recovery device operating parameters, the process vent is required to comply only with the provisions that are specified in 40 CFR part 60, subpart III for continuous monitoring of recovery device operating parameters and the associated testing, reporting, and recordkeeping.

(3) After the compliance dates specified in 63.100 of subpart F of this part, if an owner or operator of a process vent subject to this subpart that is also subject to the provisions of 40 CFR part 60, subpart III elects to control the process vent to the levels required in §63.113 (a)(1) or (a)(2) of this subpart without calculating the TRE index value for the vent according to the procedures specified in §63.115(d) of this subpart then the owner or operator shall comply with the testing, monitoring, reporting, and recordkeeping provisions of this subpart and shall be exempt from the testing, monitoring, reporting, and recordkeeping provisions of 40 CFR part 60, subpart III.

(4) After the compliance dates specified in §63.100 of subpart F of this part, a Group 1 process vent that is also subject to the provisions of 40 CFR part 60, subpart NNN is required to comply only with the provisions of this subpart.

(5) After the compliance dates specified in §63.100 of subpart F of this part, the owner or operator of a Group 2 process vent that is also subject to the

provisions of 40 CFR part 60, subpart NNN shall determine requirements according to paragraphs (d)(5)(i) and (d)(5)(ii) of this section.

(i) If the Group 2 process vent has a TRE value less than 1 as determined by the procedures in 40 CFR part 60, subpart NNN, the process vent is required to comply with the provisions in paragraphs (d)(5)(i)(A) through (d)(5)(i)(C) of this section.

(A) The provisions in both this subpart and in 40 CFR part 60, subpart NNN for applicability determination and the associated recordkeeping and reporting;

(B) The provisions in both this subpart and in 40 CFR part 60, subpart NNN for process changes and recalculation of the TRE index value and the associated recordkeeping and reporting; and

(C) The control requirements in §60.662 of 40 CFR part 60, subpart NNN. The owner or operator may elect to comply with either the associated testing, monitoring, reporting, and recordkeeping requirements of 40 CFR part 60, subpart NNN or with the testing, monitoring, reporting, and recordkeeping requirements specified in this subpart for Group 1 process vents. The owner or operator shall indicate this decision in either the Notification of Compliance Status specified in §63.152(b) of this subpart or in an operating permit application or amendment.

(ii) If the Group 2 process vent has a TRE value greater than or equal to 1 as determined by the procedures in 40 CFR part 60, subpart NNN, the process vent is required to comply only with the provisions specified in paragraphs (d)(5)(ii)(A) through (d)(5)(ii)(D) of this section.

(A) The provisions in both this subpart and in 40 CFR part 60, subpart NNN for applicability determination and the associated recordkeeping and reporting;

(B) The provisions in both this subpart and in 40 CFR part 60, subpart NNN for process changes and recalculation of the TRE index value and the associated recordkeeping and reporting;

(C) If the provisions of both this subpart and 40 CFR part 60, subpart NNN

require continuous monitoring of recovery device operating parameters, the process vent is required to comply only with the provisions that are specified in this subpart for continuous monitoring of recovery device operating parameters and the associated testing, reporting, and recordkeeping.

(D) If only the provisions of 40 CFR part 60, subpart NNN require continuous monitoring of recovery device operating parameters, the process vent is required to comply only with the provisions that are specified in 40 CFR part 60, subpart NNN for continuous monitoring of recovery device operating parameters and the associated testing, reporting, and recordkeeping.

(6) After the compliance dates specified in § 63.100 of subpart F of this part, if an owner or operator of a process vent subject to this subpart that is also subject to the provisions of 40 CFR part 60, subpart NNN elects to control the process vent to the levels required in § 63.113(a)(1) or (a)(2) of this subpart without calculating the TRE index value for the vent according to the procedures specified in § 63.115(d) of this subpart then the owner or operator shall comply with the testing, monitoring, reporting, and recordkeeping provisions of this subpart and shall be exempt from the testing, monitoring, reporting, and recordkeeping provisions of 40 CFR part 60, subpart NNN.

(7) After the compliance dates specified in § 63.100 of subpart F of this part, a Group 1 process vent that is also subject to the provisions of 40 CFR part 60, subpart RRR is required to comply only with the provisions of this subpart.

(8) After the compliance dates specified in § 63.100 of subpart F of this part, the owner or operator of a Group 2 process vent that is also subject to the provisions of 40 CFR part 60, subpart RRR shall determine requirements according to paragraphs (d)(8)(i) and (d)(8)(ii) of this section.

(i) If the Group 2 process vent has a TRE value less than 1 as determined by the procedures in 40 CFR part 60, subpart RRR, the process vent is required to comply with the provisions in paragraphs (d)(8)(i)(A) through (d)(8)(i)(C) of this section.

(A) The provisions in both this subpart and in 40 CFR part 60, subpart RRR for applicability determination and the associated recordkeeping and reporting;

(B) The provisions in both this subpart and in 40 CFR part 60, subpart RRR for process changes and recalculation of the TRE index value and the associated recordkeeping and reporting; and

(C) The control requirements in § 60.702 of 40 CFR part 60, subpart RRR. The owner or operator may elect to comply with either the associated testing, monitoring, reporting, and recordkeeping requirements of 40 CFR part 60, subpart RRR or with the testing, monitoring, reporting, and recordkeeping requirements specified in this subpart for Group 1 process vents. The owner or operator shall indicate this decision in either the Notification of Compliance Status specified in § 63.152(b) of this subpart or in an operating permit application or amendment.

(ii) If the Group 2 process vent has a TRE value greater than or equal to 1 as determined by the procedures in 40 CFR part 60, subpart RRR, the process vent is required to comply only with the provisions specified in paragraphs (d)(8)(ii)(A) through (d)(8)(ii)(D) of this section.

(A) The provisions in both this subpart and in 40 CFR part 60, subpart RRR for applicability determination and the associated recordkeeping and reporting;

(B) The provisions in both this subpart and in 40 CFR part 60, subpart RRR for process changes and recalculation of the TRE index value and the associated recordkeeping and reporting;

(C) If the provisions of both this subpart and 40 CFR part 60, subpart RRR require continuous monitoring of recovery device operating parameters, the process vent is required to comply only with the provisions that are specified in this subpart for continuous monitoring of recovery device operating parameters and the associated testing, reporting, and recordkeeping.

(D) If only the provisions of 40 CFR part 60, subpart RRR require continuous monitoring of recovery device operating parameters, the process vent is

required to comply only with the provisions that are specified in 40 CFR part 60, subpart RRR for continuous monitoring of recovery device operating parameters and the associated testing, reporting, and recordkeeping.

(9) After the compliance dates specified in §63.100 of subpart F of this part, if an owner or operator of a process vent subject to this subpart that is also subject to the provisions of 40 CFR part 60, subpart RRR elects to control the process vent to the levels required in §63.113(a)(1) or (a)(2) of this subpart without calculating the TRE index value for the vent according to the procedures specified in §63.115(d) of this subpart then the owner or operator shall comply with the testing, monitoring, reporting, and recordkeeping provisions of this subpart and shall be exempt from the testing, monitoring, reporting, and recordkeeping provisions of 40 CFR part 60, subpart RRR.

(e) *Overlap with other regulations for wastewater.* (1) After the compliance dates specified in §63.100 of subpart F of this part, a Group 1 or Group 2 wastewater stream that is also subject to the provisions of 40 CFR part 61, subpart FF is required to comply with the provisions of both this subpart and 40 CFR part 61, subpart FF.

(2) After the compliance dates specified in §63.100 of subpart F of this part, the owner or operator of any Group 1 or Group 2 wastewater stream that is also subject to provisions in 40 CFR parts 260 through 272 shall comply with the requirements of either paragraph (e)(2)(i) or (e)(2)(ii) of this section.

(i) For each Group 1 or Group 2 wastewater stream, the owner or operator shall comply with the more stringent control requirements (e.g., waste management units, numerical treatment standards, etc.) and the more stringent testing, monitoring, recordkeeping, and reporting requirements that overlap between the provisions of this subpart and the provisions of 40 CFR parts 260 through 272. The owner or operator shall keep a record of the information used to determine which requirements were the most stringent and shall submit this information if requested by the Administrator; or

(ii) The owner or operator shall submit as part of the Implementation Plan

required by §63.151(c) of this subpart or as part of an operating permit application a request for a case-by-case determination of requirements. The request shall include the information specified in paragraphs (e)(2)(i)(A) and (e)(2)(i)(B) of this section.

(A) Identification of the wastewater streams that are subject to this subpart and to provisions in 40 CFR parts 260 through 272, determination of the Group 1/Group 2 status of those streams, determination of whether or not those streams are listed or exhibit a characteristic as specified in 40 CFR part 261, and determination of whether the waste management unit is subject to permitting under 40 CFR part 270.

(B) Identification of the specific control requirements (e.g., waste management units, numerical treatment standards, etc.) and testing, monitoring, recordkeeping, and reporting requirements that overlap between the provisions of this subpart and the provisions of 40 CFR parts 260 through 272.

(f) *Overlap with the Vinyl Chloride NESHAP.* (1) After the compliance dates specified in §63.100 of subpart F of this part, the owner or operator of any Group 1 process vent that is also subject to the provisions of 40 CFR part 61, subpart F shall comply only with the provisions of this subpart.

(2) After the compliance dates specified in §63.100 of subpart F of this part, the owner or operator of any Group 2 process vent that is also subject to the provisions of 40 CFR part 61, subpart F shall comply with the provisions specified in either paragraph (f)(2)(i) or (f)(2)(ii) of this subpart.

(i) If the process vent is already controlled by a combustion device meeting the requirements of 40 CFR part 61, subpart F, then the owner or operator shall comply with either the associated testing, monitoring, reporting, and recordkeeping provisions for Group 1 process vents in this subpart or the testing, monitoring, reporting, and recordkeeping provisions of 40 CFR part 61, subpart F. The owner or operator shall indicate this decision in either the Notification of Compliance Status specified in §63.152(b) of this subpart or in an operating permit application or amendment.

(ii) If the process vent is not already controlled by a combustion device, then the owner or operator shall comply with the provisions of both this subpart and 40 CFR part 61, subpart F.

(3) After the compliance dates specified in § 63.100 of subpart F of this part, if an owner or operator of a process vent subject to this subpart that is also subject to the provisions of 40 CFR part 61, subpart F elects to control the process vent to the levels required in § 63.113(a)(1) or (a)(2) of this subpart without calculating the TRE index value for the vent according to the procedures specified in § 63.115(d) of this subpart then the owner or operator shall comply with the testing, monitoring, reporting, and recordkeeping provisions of this subpart and shall be exempt from the testing, monitoring, reporting, and recordkeeping provisions of 40 CFR part 61, subpart F.

(4) After the compliance dates specified in § 63.100 of subpart F of this part, the owner or operator of a Group 1 or Group 2 wastewater stream that is also subject to the provisions of 40 CFR part 61, subpart F shall comply with the provisions of either paragraph (f)(4)(i) or (f)(4)(ii) of this section.

(i) The owner or operator shall comply with the provisions of both this subpart and 40 CFR part 61, subpart F or

(ii) The owner or operator may submit, as part of the Implementation Plan required by § 63.151(c) of this subpart or as part of an operating permit application, information demonstrating how compliance with 40 CFR part 61, subpart F will also ensure compliance with this subpart. The information shall include a description of the testing, monitoring, reporting, and recordkeeping that will be performed.

(g) *Rules stayed for reconsideration.* Notwithstanding any other provision of this subpart, the effectiveness of subpart G is stayed from October 24, 1994, to April 24, 1995, only as applied to those sources for which the owner or operator makes a representation in writing to the Administrator that the resolution of the area source definition issues could have an effect on the com-

pliance status of the source with respect to subpart G.

[59 FR 19468, Apr. 22, 1994, as amended at 59 FR 53360, Oct. 24, 1994; 60 FR 5321, Jan. 27, 1995]

#### § 63.111 Definitions.

All terms used in this subpart shall have the meaning given them in the Act, in subpart F of this part, and in this section, as follows.

*Air oxidation reactor* means a device or vessel in which air, or a combination of air and oxygen, is used as an oxygen source in combination with one or more organic reactants to produce one or more organic compounds. Air oxidation reactor includes the product separator and any associated vacuum pump or steam jet.

*Automated monitoring and recording system* means any means of measuring values of monitored parameters and creating a hard copy or computer record of the measured values that does not require manual reading of monitoring instruments and manual transcription of data values. Automated monitoring and recording systems include, but are not limited to, computerized systems and strip charts.

*Average concentration*, as used in the wastewater provisions, means the flow-weighted annual average concentration, as determined according to the procedures specified in § 63.144(b) of this subpart.

*Average flow rate*, as used in the wastewater provisions, means the annual average flow rate, as determined according to the procedures specified in § 63.144(c).

*Batch operation* means a noncontinuous operation in which a discrete quantity or batch of feed is charged into a unit operation within a chemical manufacturing process unit and distilled or reacted at one time. Batch operation includes noncontinuous operations in which the equipment is fed intermittently or discontinuously. Addition of raw material and withdrawal of product do not occur simultaneously in a batch operation. After each batch operation, the equipment is generally emptied before a fresh batch is started.

*Boiler* means any enclosed combustion device that extracts useful energy

in the form of steam and is not an incinerator.

*By compound* means by individual stream components, not carbon equivalents.

*Car-seal* means a seal that is placed on a device that is used to change the position of a valve (e.g., from opened to closed) in such a way that the position of the valve cannot be changed without breaking the seal.

*Closed-vent system* means a system that is not open to the atmosphere and is composed of piping, ductwork, connections, and, if necessary, flow inducing devices that transport gas or vapor from an emission point to a control device or back into the process.

*Combustion device* means an individual unit of equipment, such as a flare, incinerator, process heater, or boiler, used for the combustion of organic hazardous air pollutant vapors.

*Container*, as used in the wastewater provisions, means any portable waste management unit that has a capacity greater than or equal to 0.1 m<sup>3</sup> in which a material is stored, transported, treated, or otherwise handled. Examples of containers are drums, barrels, tank trucks, barges, dumpsters, tank cars, dump trucks, and ships.

*Continuous record* means documentation, either in hard copy or computer readable form, of data values measured at least once every 15 minutes and recorded at the frequency specified in § 63.152(f) of this subpart.

*Continuous recorder* means a data recording device that either records an instantaneous data value at least once every 15 minutes or records 15-minute or more frequent block average values.

*Continuous seal* means a seal that forms a continuous closure that completely covers the space between the wall of the storage vessel and the edge of the floating roof. A continuous seal may be a vapor-mounted, liquid-mounted, or metallic shoe seal.

*Continuous vapor processing system* means a vapor processing system that treats total organic compound vapors collected from tank trucks or railcars on a demand basis without intermediate accumulation in a vapor holder.

*Control device* means any equipment used for recovering or oxidizing organic hazardous air pollutant vapors. Such

equipment includes, but is not limited to, absorbers, carbon adsorbers, condensers, incinerators, flares, boilers, and process heaters. For process vents, recovery devices are not considered control devices and for a steam stripper, a primary condenser is not considered a control device.

*Cover*, as used in the wastewater provisions, means a device or system which is placed on or over a waste management unit containing wastewater or residuals so that the entire surface area is enclosed and sealed to minimize air emissions. A cover may have openings necessary for operation, inspection, and maintenance of the waste management unit such as access hatches, sampling ports, and gauge wells provided that each opening is closed and sealed when not in use. Examples of covers include a fixed roof installed on a wastewater tank, a lid installed on a container, and an air-supported enclosure installed over a waste management unit.

*Distillate receiver* means overhead receivers, overhead accumulators, reflux drums, and condenser(s) including ejector-condenser(s) associated with a distillation unit.

*Distillation unit* means a device or vessel in which one or more feed streams are separated into two or more exit streams, each exit stream having component concentrations different from those in the feed stream(s). The separation is achieved by the redistribution of the components between the liquid and the vapor phases by vaporization and condensation as they approach equilibrium within the distillation unit. Distillation unit includes the distillate receiver, reboiler, and any associated vacuum pump or steam jet.

*Duct work* means a conveyance system such as those commonly used for heating and ventilation systems. It is often made of sheet metal and often has sections connected by screws or crimping. Hard-piping is not ductwork.

*External floating roof* means a pontoon-type or double-deck-type cover that rests on the liquid surface in a storage vessel or waste management unit with no fixed roof.

*Fill or filling* means the introduction of organic hazardous air pollutant into

a storage vessel or the introduction of a wastewater stream or residual into a waste management unit, but not necessarily to complete capacity.

*First attempt at repair* means to take action for the purpose of stopping or reducing leakage of organic material to the atmosphere.

*Fixed roof* means a cover that is mounted on a waste management unit or storage vessel in a stationary manner and that does not move with fluctuations in liquid level.

*Flame zone* means the portion of the combustion chamber in a boiler occupied by the flame envelope.

*Floating roof* means a cover consisting of a double deck, pontoon single deck, internal floating cover or covered floating roof, which rests upon and is supported by the liquid being contained, and is equipped with a closure seal or seals to close the space between the roof edge and waste management unit or storage vessel wall.

*Flow indicator* means a device which indicates whether gas flow is present in a line.

*Group 1 process vent* means a process vent for which the flow rate is greater than or equal to 0.005 standard cubic meter per minute, the total organic HAP concentration is greater than or equal to 50 parts per million by volume, and the total resource effectiveness index value, calculated according to § 63.115 of this subpart, is less than or equal to 1.0.

*Group 2 process vent* means a process vent for which the flow rate is less than 0.005 standard cubic meter per minute, the total organic HAP concentration is less than 50 parts per million by volume or the total resource effectiveness index value, calculated according to § 63.115 of this subpart, is greater than 1.0.

*Group 1 storage vessel* means a storage vessel that meets the criteria for design storage capacity and stored-liquid maximum true vapor pressure specified in table 5 of this subpart for storage vessels at existing sources, and in table 6 of this subpart for storage vessels at new sources.

*Group 2 storage vessel* means a storage vessel that does not meet the definition of a Group 1 storage vessel.

*Group 1 transfer rack* means a transfer rack that annually loads greater than or equal to 0.65 million liter of liquid products that contain organic hazardous air pollutants with a rack weighted average vapor pressure greater than or equal to 10.3 kilopascals.

*Group 2 transfer rack* means a transfer rack that does not meet the definition of Group 1 transfer rack.

*Group 1 wastewater stream* means a process wastewater stream from a process unit at an existing or new source with a total volatile organic hazardous air pollutant average concentration greater than or equal to 10,000 parts per million by weight of compounds listed in table 9 of this subpart at any flowrate; or a process wastewater stream from a process unit at an existing or new source that has an average flow rate greater than or equal to 10 liters per minute and a total volatile organic hazardous air pollutant average concentration greater than or equal to 1,000 parts per million by weight. A process wastewater stream from a process unit at a new source that has an average flow rate greater than or equal to 0.02 liter per minute and an average concentration of 10 parts per million by weight or greater of any one of the compounds listed in table 8 of this subpart is also considered a Group 1 wastewater stream. Average flow rate and total volatile organic hazardous air pollutant average concentration are determined for the point of generation of each process wastewater stream.

*Group 2 wastewater stream* means any process wastewater stream that does not meet the definition of a Group 1 wastewater stream.

*Halogenated vent stream* or *halogenated stream* means a vent stream from a process vent or transfer operation determined to have a mass emission rate of halogen atoms contained in organic compounds of 0.45 kilograms per hour or greater determined by the procedures presented in § 63.115(d)(2)(v) of this subpart.

*Halogens* and *hydrogen halides* means hydrogen chloride (HCl), chlorine (Cl<sub>2</sub>), hydrogen bromide (HBr), bromine (Br<sub>2</sub>), and hydrogen fluoride (HF).

*Hard-piping* means pipe or tubing that is manufactured and properly installed using good engineering judgment and standards such as American National Standards Institute (ANSI) B31-3.

*Incinerator* means an enclosed combustion device that is used for destroying organic compounds. Auxiliary fuel may be used to heat waste gas to combustion temperatures. Any energy recovery section present is not physically formed into one manufactured or assembled unit with the combustion section; rather, the energy recovery section is a separate section following the combustion section and the two are joined by ducts or connections carrying flue gas. The above energy recovery section limitation does not apply to an energy recovery section used solely to preheat the incoming vent stream or combustion air.

*Individual drain system* means the system used to convey wastewater streams from a process unit, product storage tank, feed storage tank, or waste management unit to a waste management unit. The term includes all process drains and junction boxes, together with their associated sewer lines and other junction boxes, manholes, sumps, and lift stations, down to the receiving waste management unit. A segregated stormwater sewer system, which is a drain and collection system designed and operated for the sole purpose of collecting rainfall-runoff at a facility, and which is segregated from all other individual drain systems, is excluded from this definition.

*Intermittent vapor processing system* means a vapor processing system that employs an intermediate vapor holder to accumulate total organic compound vapors collected from tank trucks or railcars, and treats the accumulated vapors only during automatically controlled cycles.

*Internal floating roof* means a cover that rests or floats on the liquid surface (but not necessarily in complete contact with it) inside a storage vessel or waste management unit that has a permanently affixed roof.

*Junction box* means a manhole or access point to a wastewater sewer system line or a lift station.

*Liquid-mounted seal* means a foam- or liquid-filled seal mounted in contact with the liquid between the wall of the storage vessel or waste management unit and the floating roof. The seal is mounted continuously around the circumference of the vessel or unit.

*Loading cycle* means the time period from the beginning of filling a tank truck or railcar until flow to the control device ceases, as measured by the flow indicator.

*Loading rack* means a single system used to fill tank trucks and railcars at a single geographic site. Loading equipment and operations that are physically separate (i.e., do not share common piping, valves, and other equipment) are considered to be separate loading racks.

*Mass flow rate*, as used in the wastewater provisions, means the rate at which the mass of a constituent in a wastewater stream flows past a point, determined by multiplying the average concentration of that constituent in the wastewater stream by the average flow rate (annual average volumetric flow rate) and density of the wastewater stream, as determined according to the procedures specified in §§ 63.144 (e)(2) and (e)(3).

*Maximum true vapor pressure* means the equilibrium partial pressure exerted by the total organic HAP's in the stored or transferred liquid at the temperature equal to the highest calendar-month average of the liquid storage or transfer temperature for liquids stored or transferred above or below the ambient temperature or at the local maximum monthly average temperature as reported by the National Weather Service for liquids stored or transferred at the ambient temperature, as determined:

(1) In accordance with methods described in American Petroleum Institute Publication 2517, Evaporative Loss From External Floating-Roof Tanks (incorporated by reference as specified in § 63.14 of subpart A of this part); or

(2) As obtained from standard reference texts; or

(3) As determined by the American Society for Testing and Materials Method D2879-83 (incorporated by reference as specified in § 63.14 of subpart A of this part); or

(4) Any other method approved by the Administrator.

*Metallic shoe seal* or *mechanical shoe seal* means a metal sheet that is held vertically against the wall of the storage vessel by springs, weighted levers, or other mechanisms and is connected to the floating roof by braces or other means. A flexible coated fabric (envelope) spans the annular space between the metal sheet and the floating roof.

*Non-automated monitoring and recording system* means manual reading of values measured by monitoring instruments and manual transcription of those values to create a record. Non-automated systems do not include strip charts.

*Oil-water separator* or *organic-water separator* means a waste management unit, generally a tank used to separate oil or organics from water. An oil-water or organic-water separator consists of not only the separation unit but also the forebay and other separator basins, skimmers, weirs, grit chambers, sludge hoppers, and bar screens that are located directly after the individual drain system and prior to additional treatment units such as an air flotation unit, clarifier, or biological treatment unit. Examples of an oil-water or organic-water separator include, but are not limited to, an American Petroleum Institute separator, parallel-plate interceptor, and corrugated-plate interceptor with the associated ancillary equipment.

*Operating permit* means a permit required by 40 CFR part 70 or part 71.

*Organic hazardous air pollutant* or *organic HAP* means any of the chemicals listed in table 2 of subpart F of this part.

*Organic monitoring device* means a unit of equipment used to indicate the concentration level of organic compounds exiting a recovery device based on a detection principle such as infrared, photoionization, or thermal conductivity.

*Point of generation* means the location where process wastewater exits the process unit equipment.

NOTE: The regulation allows determination of the characteristics of a wastewater stream (1) at the point of generation or (2) downstream of the point of generation if corrections are made for changes in flow rate and

VOHAP concentration. Such changes include losses by air emissions; reduction of VOHAP concentration or changes in flow rate by mixing with other water or wastewater streams; and reduction in flow rate or VOHAP concentration by treating or otherwise handling the wastewater stream to remove or destroy HAP's.

*Primary fuel* means the fuel that provides the principal heat input to the device. To be considered primary, the fuel must be able to sustain operation without the addition of other fuels.

*Process heater* means a device that transfers heat liberated by burning fuel directly to process streams or to heat transfer liquids other than water.

*Process unit* has the same meaning as *chemical manufacturing process unit* as defined in §63.101 of subpart F of this part and means the equipment assembled and connected by pipes or ducts to process raw materials and to manufacture an intended product. For the purpose of this subpart, process unit or chemical manufacturing process unit includes air oxidation reactors and their associated product separators and recovery devices; reactors and their associated product separators and recovery devices; distillation units and their associated distillate receivers and recovery devices; associated unit operations (as defined in this section); and any feed, intermediate and product storage vessels, product transfer racks, and connected ducts and piping. A chemical manufacturing process unit includes pumps, compressors, agitators, pressure relief devices, sampling connection systems, open-ended valves or lines, valves, connectors, instrumentation systems, and control devices or systems. A chemical manufacturing process unit is identified by its primary product.

*Process wastewater stream* means a stream that contains process wastewater as defined in §63.101 of subpart F of this part.

*Product separator* means phase separators, flash drums, knock-out drums, decanters, degassers, and condenser(s) including ejector-condenser(s) associated with a reactor or an air oxidation reactor.

*Product tank*, as used in the wastewater provisions, means a stationary unit that is designed to contain an accumulation of materials that

are fed to or produced by a process unit, and is constructed primarily of non-earthen materials (e.g., wood, concrete, steel, plastic) which provide structural support. This term has the same meaning as a product storage vessel.

*Product tank drawdown* means any material or mixture of materials discharged from a product tank for the purpose of removing water or other contaminants from the product tank.

*Rack-weighted average partial pressure* means the throughput weighted average of the average maximum true vapor pressure of liquids containing organic HAP transferred at a transfer rack. The rack-weighted average partial pressure shall be calculated using the equation below:

Where:

P = Rack-weighted average partial pressure, kilopascals.

$$P = \frac{\sum P_i G_i}{\sum G_i}$$

$P_i$  = Individual HAP maximum true vapor pressure, kilopascals, =  $X_i \cdot P$ , where  $X_i$  is the mole fraction of compound  $i$  in the liquid.

$G_i$  = Yearly volume of each liquid that contains organic HAP that is transferred at the rack, liters.

$i$  = Each liquid that contains HAP that is transferred at the rack.

*Reactor* means a device or vessel in which one or more chemicals or reactants, other than air, are combined or decomposed in such a way that their molecular structures are altered and one or more new organic compounds are formed. Reactor includes the product separator and any associated vacuum pump or steam jet.

*Recovery device* means an individual unit of equipment capable of and used for the purpose of recovering chemicals for use, reuse, or sale. Recovery devices include, but are not limited to, absorbers, carbon adsorbers, and condensers.

*Relief valve* means a valve used only to release an unplanned, nonroutine discharge. A relief valve discharge can result from an operator error, a malfunction such as a power failure or equipment failure, or other unexpected cause that requires immediate venting

of gas from process equipment in order to avoid safety hazards or equipment damage.

*Reference control technology for process vents* means a combustion device used to reduce organic HAP emissions by 98 percent, or to an outlet concentration of 20 parts per million by volume.

*Reference control technology for storage vessels* means an internal floating roof meeting the specifications of §63.119(b) of this subpart, an external floating roof meeting the specifications of §63.119(c) of this subpart, an external floating roof converted to an internal floating roof meeting the specifications of §63.119(d) of this subpart, or a closed-vent system to a control device achieving 95-percent reduction in organic HAP emissions. For purposes of emissions averaging, these four technologies are considered equivalent.

*Reference control technology for transfer racks* means a combustion device or recovery device used to reduce organic HAP emissions by 98 percent, or to an outlet concentration of 20 parts per million by volume; or a vapor balancing system.

*Reference control technology for wastewater* means the use of:

(1) Controls specified in §63.133 through §63.137;

(2) A steam stripper meeting the specifications of §63.138(g) of this subpart or any of the other alternative control measures specified in §63.138 (b), (c), (d), and (e) of this subpart; and

(3) A control device to reduce by 95 percent (or to an outlet concentration of 20 parts per million by volume for combustion devices) the organic HAP emissions in the vapor streams vented from wastewater tanks, oil-water separators, containers, surface impoundments, individual drain systems, and treatment processes (including the design steam stripper) managing wastewater.

*Residual* means any HAP-containing water or organic that is removed from a wastewater stream by a waste management unit or treatment process that does not destroy organics (non-destructive unit). Examples of residuals from nondestructive wastewater management units are: The organic layer and bottom residue removed by a decanter or organic-water separator

and the overheads from a steam stripper or air stripper. Examples of materials which are not residuals are: Silt; mud; leaves; bottoms from a steam stripper or air stripper; and sludges, ash, or other materials removed from wastewater being treated by destructive devices such as biological treatment units and incinerators.

*Secondary fuel* means a fuel fired through a burner other than the primary fuel burner that provides supplementary heat in addition to the heat provided by the primary fuel.

*Sewer line* means a lateral, trunk line, branch line, or other conduit including, but not limited to, grates, trenches, etc., used to convey wastewater streams or residuals to a downstream waste management unit.

*Simultaneous loading* means, for a shared control device, loading of organic HAP materials from more than one transfer arm at the same time such that the beginning and ending times of loading cycles coincide or overlap and there is no interruption in vapor flow to the shared control device.

*Single-seal system* means a floating roof having one continuous seal that completely covers the space between the wall of the storage vessel and the edge of the floating roof. This seal may be a vapor-mounted, liquid-mounted, or metallic shoe seal.

*Specific gravity monitoring device* means a unit of equipment used to monitor specific gravity and having an accuracy of  $\pm 0.02$  specific gravity units.

*Steam jet ejector* means a steam nozzle which discharges a high-velocity jet across a suction chamber that is connected to the equipment to be evacuated.

*Surface impoundment* means a waste management unit which is a natural topographic depression, manmade excavation, or diked area formed primarily of earthen materials (although it may be lined with manmade materials), which is designed to hold an accumulation of liquid wastes or waste containing free liquids. A surface impoundment is used for the purpose of treating, storing, or disposing of wastewater or residuals, and is not an injection well. Examples of surface impoundments are equalization, settling, and aeration pits, ponds, and lagoons.

*Surge control vessel* means feed drums, recycle drums, and intermediate vessels. Surge control vessels are used within a chemical manufacturing process unit when in-process storage, mixing, or management of flow rates or volumes is needed to assist in production of a product.

*Temperature monitoring device* means a unit of equipment used to monitor temperature and having an accuracy of  $\pm 1$  percent of the temperature being monitored expressed in degrees Celsius or  $\pm 0.5$  degrees Celsius ( $^{\circ}\text{C}$ ), whichever is greater.

*The 33/50 program* means a voluntary pollution prevention initiative established and administered by the EPA to encourage emissions reductions of 17 chemicals emitted in large volumes by industrial facilities. The EPA Document Number 741-K-92-001 provides more information about the 33/50 program.

*Total organic compounds* or *TOC*, as used in the process vents provisions, means those compounds measured according to the procedures of Method 18 of 40 CFR part 60, appendix A.

*Total resource effectiveness index value* or *TRE index value* means a measure of the supplemental total resource requirement per unit reduction of organic HAP associated with a process vent stream, based on vent stream flow rate, emission rate of organic HAP, net heating value, and corrosion properties (whether or not the vent stream contains halogenated compounds), as quantified by the equations given under § 63.115 of this subpart.

*Total volatile organic hazardous air pollutant concentration* means the sum of the concentrations of all individually-speciated organic HAP's, as measured by Method 305 in appendix A of this part.

*Treatment process* means a specific technique that removes or destroys the organics in a wastewater or residual stream such as a steam stripping unit, thin-film evaporation unit, waste incinerator, biological treatment unit, or any other process applied to wastewater streams or residuals to comply with § 63.138 of this subpart. Most treatment processes are conducted in tanks. Treatment processes

are a subset of waste management units.

*Vapor collection system*, as used in the transfer provisions, means the equipment used to collect and transport organic HAP vapors displaced during the loading of tank trucks or railcars. This does not include the vapor collection system that is part of any tank truck or railcar vapor collection manifold system.

*Vapor-mounted seal* means a continuous seal that completely covers the annular space between the wall of the storage vessel or waste management unit and the edge of the floating roof and is mounted such that there is a vapor space between the stored liquid and the bottom of the seal.

*Vent stream*, as used in the process vent provisions, means a process vent as defined in §63.101 of subpart F of this part.

*Volatile organic concentration* or *VO concentration* refers to the concentration of organic compounds (including both HAP and non-HAP organic compounds) in a wastewater stream that is measured by Method 25D, as found in 40 CFR part 60, appendix A.

*Volatile organic hazardous air pollutant concentration* or *VOHAP concentration* means the concentration of an individually-specified organic HAP in a wastewater stream or a residual that is measured by Method 305 in appendix A of this part.

*Waste management unit* means any component, piece of equipment, structure, or transport mechanism used in conveying, storing, treating, or disposing of wastewater streams or residuals. Examples of waste management units include wastewater tanks, air flotation units, surface impoundments, containers, oil-water or organic-water separators, individual drain systems, biological treatment units, waste incinerators, and organic removal devices such as decanters, steam and air stripper units, and thin-film evaporation units.

*Wastewater stream* means a stream that contains only wastewater as defined in §63.101 of subpart F of this part.

*Wastewater tank* means a stationary waste management unit that is designed to contain an accumulation of

wastewater or residuals and is constructed primarily of non-earthen materials (e.g., wood, concrete, steel, plastic) which provide structural support. Wastewater tanks used for flow equalization are included in this definition.

*Water seal controls* means a seal pot, p-leg trap, or other type of trap filled with water (e.g., flooded sewers that maintain water levels adequate to prevent air flow through the system) that creates a water barrier between the sewer line and the atmosphere. The water level of the seal must be maintained in the vertical leg of a drain in order to be considered a water seal.

[59 FR 19468, Apr. 22, 1994, as amended at 60 FR 18024, 18029, Apr. 10, 1995; 60 FR 63626, Dec. 12, 1995]

#### §63.112 Emission standard.

(a) The owner or operator of an existing source subject to the requirements of this subpart shall control emissions of organic HAP's to the level represented by the following equation:

$$E_A = 0.02\Sigma EPV_1 + \Sigma EPV_2 + 0.05\Sigma ES_1 + \Sigma ES_2 + 0.02\Sigma ETR_1 + \Sigma ETR_2 + \Sigma EWW_{1C} + \Sigma EWW_2$$

where:

$E_A$  = Emission rate, megagrams per year, allowed for the source.

$0.02\Sigma EPV_1$  = Sum of the residual emissions, megagrams per year, from all Group 1 process vents, as defined in §63.111 of this subpart.

$\Sigma EPV_2$  = Sum of the emissions, megagrams per year, from all Group 2 process vents as defined in §63.111 of this subpart.

$0.05\Sigma ES_1$  = Sum of the residual emissions, megagrams per year, from all Group 1 storage vessels, as defined in §63.111 of this subpart.

$\Sigma ES_2$  = Sum of the emissions, megagrams per year, from all Group 2 storage vessels, as defined in §63.111 of this subpart.

$0.02\Sigma ETR_1$  = Sum of the residual emissions, megagrams per year, from all Group 1 transfer racks, as defined in §63.111 of this subpart.

$\Sigma ETR_2$  = Sum of the emissions, megagrams per year, from all Group 2 transfer racks, as defined in §63.111 of this subpart.

$\Sigma EWW_{1C}$  = Sum of the residual emissions from all Group 1 wastewater

streams, as defined in §63.111 of this subpart. This term is calculated for each Group 1 stream according to the equation for  $EW_{1C}$  in §63.150(g)(5)(i) of this subpart.

$\Sigma EWW_2$  = Sum of emissions from all Group 2 wastewater streams, as defined in §63.111 of this subpart.

The emissions level represented by this equation is dependent on the collection of emission points in the source. The level is not fixed and can change as the emissions from each emission point change or as the number of emission points in the source changes.

(b) The owner or operator of a new source subject to the requirements of this subpart shall control emissions of organic HAP's to the level represented by the equation in paragraph (a) of this section.

(c) The owner or operator of an existing source shall demonstrate compliance with the emission standard in paragraph (a) of this section by following the procedures specified in paragraph (e) of this section for all emission points, or by following the emissions averaging compliance approach specified in paragraph (f) of this section for some emission points and the procedures specified in paragraph (e) of this section for all other emission points within the source.

(d) The owner or operator of a new source shall demonstrate compliance with the emission standard in paragraph (b) of this section only by following the procedures in paragraph (e) of this section. The owner or operator of a new source may not use the emissions averaging compliance approach.

(e) The owner or operator of an existing or new source may comply with the process vent provisions in §§63.113 through 63.118 of this subpart, the storage vessel provisions in §§63.119 through 63.123 of this subpart, the transfer operation provisions in §§63.126 through 63.130 of this subpart, the wastewater provisions in §§63.131 through 63.147 of this subpart, and the leak inspection provisions in §63.148 of this subpart.

(1) The owner or operator using this compliance approach shall also comply with the requirements of §63.151 and §63.152 of this subpart, as applicable.

(2) The owner or operator using this compliance approach is not required to calculate the annual emission rate specified in paragraph (a) of this section.

(f) The owner or operator of an existing source may elect to control some of the emission points within the source to different levels than specified under §§63.113 through 63.148 of this subpart by using an emissions averaging compliance approach as long as the overall emissions for the source do not exceed the emission level specified in paragraph (a) of this section. The owner or operator using emissions averaging must meet the requirements in paragraphs (f)(1) and (f)(2) of this section.

(1) Calculate emission debits and credits for those emission points involved in the emissions average as specified in §63.150 of this subpart; and

(2) Comply with the requirements of §63.151 and §63.152 of this subpart, as applicable.

(g) A State may restrict the owner or operator of an existing source to using only the procedures in paragraph (e) of this section to comply with the emission standard in paragraph (a) of this section.

**§63.113 Process vent provisions—reference control technology.**

(a) The owner or operator of a Group 1 process vent as defined in subpart F of this part and in this subpart shall comply with the requirements of paragraph (a)(1), (a)(2), or (a)(3) of this section.

(1) Reduce emissions of organic HAP using a flare.

(i) The flare shall comply with the requirements of §63.11(b) of subpart A of this part.

(ii) Halogenated vent streams, as defined in §63.111 of this subpart, shall not be vented to a flare.

(2) Reduce emissions of total organic HAP by 98 weight-percent or to a concentration of 20 parts per million by volume, on a dry basis, corrected to 3 percent oxygen, whichever is less stringent. Compliance can be determined by measuring either organic HAP or TOC using the procedures in §63.116 of this subpart.

(3) Achieve and maintain a TRE index value greater than 1.0 at the outlet of the final recovery device, or prior to release of the vent stream to the atmosphere if no recovery device is present. In this case, the vent shall comply with the provisions for a Group 2 process vent specified in either paragraph (d) or (e) of this section, whichever is applicable.

(b) If a boiler or process heater is used to comply with the percent reduction requirement or concentration limit specified in paragraph (a)(2) of this section, then the vent stream shall be introduced into the flame zone of such a device.

(c) Halogenated Group 1 process vent streams that are combusted shall be controlled according to paragraph (c)(1) or (c)(2) of this section.

(1) If a combustion device is used to comply with paragraph (a)(2) of this section for a halogenated vent stream, then the vent stream shall be ducted from the combustion device to an additional control device, including but not limited to a scrubber, before it is discharged to the atmosphere.

(i) Except as provided in paragraph (c)(1)(ii) of this section, the additional control device shall reduce overall emissions of hydrogen halides and halogens, as defined in § 63.111 of this subpart, by 99 percent or shall reduce the outlet mass of total hydrogen halides and halogens to less than 0.45 kilogram per hour, whichever is less stringent.

(ii) If a scrubber or other halogen control device was installed prior to December 31, 1992, the control device shall reduce overall emissions of hydrogen halides and halogens, as defined in § 63.111 of this subpart, by 95 percent or shall reduce the outlet mass of total hydrogen halides and halogens to less than 0.45 kilograms per hour, whichever is less stringent.

(2) A control device, such as a scrubber, or other technique may be used to reduce the vent stream halogen atom mass emission rate to less than 0.45 kilogram per hour prior to any combustion control device, and thus make the vent stream nonhalogenated; the vent stream must comply with the requirements of paragraph (a)(1) or (a)(2) of this section.

(d) The owner or operator of a Group 2 process vent having a flow rate greater than or equal to 0.005 standard cubic meter per minute, a HAP concentration greater than or equal to 50 parts per million by volume, and a TRE index value greater than 1.0 but less than or equal to 4.0 shall maintain a TRE index value greater than 1.0 and shall comply with the monitoring of recovery device parameters in § 63.114(b) or (c) of this subpart, the TRE index calculations of § 63.115 of this subpart, and the applicable reporting and recordkeeping provisions of §§ 63.117 and 63.118 of this subpart. Such owner or operator is not subject to any other provisions of §§ 63.114 through 63.118 of this subpart.

(e) The owner or operator of a Group 2 process vent with a TRE index greater than 4.0 shall maintain a TRE index value greater than 4.0, comply with the provisions for calculation of TRE index in § 63.115 of this subpart and the reporting and recordkeeping provisions in § 63.117(b) of this subpart, § 63.118(c) of this subpart, and § 63.118(h) of this subpart, and is not subject to monitoring or any other provisions of §§ 63.114 through 63.118 of this subpart.

(f) The owner or operator of a Group 2 process vent with a flow rate less than 0.005 standard cubic meter per minute shall maintain a flow rate less than 0.005 standard cubic meter per minute; comply with the Group determination procedures in § 63.115 (a), (b), and (e) of this subpart; and the reporting and recordkeeping requirements in § 63.117(c) of this subpart, § 63.118(d) of this subpart, and § 63.118(i) of this subpart; and is not subject to monitoring or any other provisions of §§ 63.114 through 63.118 of this subpart.

(g) The owner or operator of a Group 2 process vent with a concentration less than 50 parts per million by volume shall maintain a concentration less than 50 parts per million by volume; comply with the Group determination procedures in § 63.115 (a), (c), and (e) of this subpart; the reporting and recordkeeping requirements in § 63.117(d) of this subpart, § 63.118(e) of this subpart, and § 63.118(j) of this subpart; and is not subject to monitoring or any other provisions of §§ 63.114 through 63.118 of this subpart.

(h) The owner or operator of a process vent complying with paragraph (a)(1) or (a)(2) of this section is not required to perform the group determination described in §63.115 of this subpart.

**§63.114 Process vent provisions—monitoring requirements.**

(a) Each owner or operator of a process vent that uses a combustion device to comply with the requirements in §63.113 (a)(1) or (a)(2) of this subpart shall install monitoring equipment specified in paragraph (a)(1), (a)(2), (a)(3), or (a)(4) of this section, depending on the type of combustion device used. All monitoring equipment shall be installed, calibrated, maintained, and operated according to manufacturers specifications.

(1) Where an incinerator is used, a temperature monitoring device equipped with a continuous recorder is required.

(i) Where an incinerator other than a catalytic incinerator is used, a temperature monitoring device shall be installed in the firebox or in the ductwork immediately downstream of the firebox in a position before any substantial heat exchange occurs.

(ii) Where a catalytic incinerator is used, temperature monitoring devices shall be installed in the gas stream immediately before and after the catalyst bed.

(2) Where a flare is used, the following monitoring equipment is required: A device (including but not limited to a thermocouple, ultra-violet beam sensor, or infrared sensor) capable of continuously detecting the presence of a pilot flame.

(3) Where a boiler or process heater of less than 44 megawatts design heat input capacity is used, the following monitoring equipment is required: A temperature monitoring device in the firebox equipped with a continuous recorder. Any boiler or process heater in which all vent streams are introduced with primary fuel or are used as the primary fuel is exempt from this requirement.

(4) Where a scrubber is used with an incinerator, boiler, or process heater in the case of halogenated vent streams,

the following monitoring equipment is required for the scrubber.

(i) A pH monitoring device equipped with a continuous recorder shall be installed to monitor the pH of the scrubber effluent.

(ii) Flow meters equipped with continuous recorders shall be located at the scrubber influent for liquid flow and the scrubber inlet for gas stream flow.

(b) Each owner or operator of a process vent with a TRE index value greater than 1.0 as specified under §63.113(a)(3) or §63.113(d) of this subpart, that uses one or more product recovery devices shall install either an organic monitoring device equipped with a continuous recorder or the monitoring equipment specified in paragraph (b)(1), (b)(2), or (b)(3) of this section, depending on the type of recovery device used. All monitoring equipment shall be installed, calibrated, and maintained according to the manufacturers specifications. Monitoring is not required for process vents with TRE index values greater than 4.0 as specified in §63.113(e) of this subpart.

(1) Where an absorber is the final recovery device in the recovery system, a scrubbing liquid temperature monitoring device and a specific gravity monitoring device, each equipped with a continuous recorder shall be used;

(2) Where a condenser is the final recovery device in the recovery system, a condenser exit (product side) temperature monitoring device equipped with a continuous recorder shall be used;

(3) Where a carbon adsorber is the final recovery device in the recovery system, an integrating regeneration stream flow monitoring device having an accuracy of  $\pm 10$  percent, capable of recording the total regeneration stream mass flow for each regeneration cycle; and a carbon bed temperature monitoring device, capable of recording the carbon bed temperature after each regeneration and within 15 minutes of completing any cooling cycle shall be used.

(c) An owner or operator of a process vent may request approval to monitor parameters other than those listed in paragraph (a) or (b) of this section. The request shall be submitted according to the procedures specified in §63.151(f) or

§63.152(e) of this subpart. Approval shall be requested if the owner or operator:

(1) Uses a control device other than an incinerator, boiler, process heater, or flare; or

(2) Maintains a TRE greater than 1.0 but less than or equal to 4.0 without a recovery device or with a recovery device other than the recovery devices listed in paragraphs (a) and (b) of this section; or

(3) Uses one of the control or recovery devices listed in paragraphs (a) and (b) of this section, but seeks to monitor a parameter other than those specified in paragraphs (a) and (b) of this section.

(d) The owner or operator of a process vent using a vent system that contains bypass lines that could divert a vent stream away from the control device used to comply with §63.113 (a)(1) or (a)(2) of this subpart shall comply with paragraph (d)(1) or (d)(2) of this section. Equipment such as low leg drains, high point bleeds, analyzer vents, open-ended valves or lines, and pressure relief valves needed for safety purposes are not subject to this paragraph.

(1) Install, calibrate, maintain, and operate a flow indicator that determines whether vent stream flow is present at least once every 15 minutes. Records shall be generated as specified in §63.118(a)(3) of this subpart. The flow indicator shall be installed at the entrance to any bypass line that could divert the vent stream away from the control device to the atmosphere; or

(2) Secure the bypass line valve in the closed position with a car-seal or a lock-and-key type configuration. A visual inspection of the seal or closure mechanism shall be performed at least once every month to ensure that the valve is maintained in the closed position and the vent stream is not diverted through the bypass line.

(e) The owner or operator shall establish a range that indicates proper operation of the control or recovery device for each parameter monitored under paragraphs (a), (b), and (c) of this section. In order to establish the range, the information required in §63.152(b) of this subpart shall be submitted in the Notification of Compliance Status

or the operating permit application or amendment.

**§63.115 Process vent provisions—methods and procedures for process vent group determination.**

(a) For purposes of determining process vent stream flow rate, total organic HAP or TOC concentration or TRE index value, as specified under paragraph (b), (c), or (d) of this section, the sampling site shall be after the last product recovery device (if any recovery devices are present) but prior to the inlet of any control device that is present, prior to any dilution of the process vent stream, and prior to release to the atmosphere.

(1) Method 1 or 1A of 40 CFR part 60, appendix A, as appropriate, shall be used for selection of the sampling site.

(2) No traverse site selection method is needed for vents smaller than 0.10 meter in diameter.

(b) To demonstrate that a process vent stream flow rate is less than 0.005 standard cubic meter per minute in accordance with the Group 2 process vent definition of this subpart, the owner or operator shall measure flow rate by the following procedures:

(1) The sampling site shall be selected as specified in paragraph (a) of this section.

(2) The gas volumetric flow rate shall be determined using Method 2, 2A, 2C, or 2D of 40 CFR part 60, appendix A, as appropriate.

(c) Each owner or operator seeking to demonstrate that a process vent stream has an organic HAP concentration below 50 parts per million by volume in accordance with the Group 2 process vent definition of this subpart shall measure either total organic HAP or TOC concentration using the following procedures:

(1) The sampling site shall be selected as specified in paragraph (a) of this section.

(2) Method 18 or Method 25A of 40 CFR part 60, appendix A shall be used to measure concentration; alternatively, any other method or data that has been validated according to the protocol in Method 301 of appendix A of this part may be used.

(3) Where Method 18 of 40 CFR part 60, appendix A is used, the following

procedures shall be used to calculate parts per million by volume concentration:

(i) The minimum sampling time for each run shall be 1 hour in which either an integrated sample or four grab samples shall be taken. If grab sampling is used, then the samples shall be taken at approximately equal intervals in time, such as 15 minute intervals during the run.

(ii) The concentration of either TOC (minus methane and ethane) or organic HAP shall be calculated according to paragraph (c)(3)(ii)(A) or (c)(3)(ii)(B) of this section as applicable.

(A) The TOC concentration ( $C_{TOC}$ ) is the sum of the concentrations of the individual components and shall be computed for each run using the following equation:

$$C_{TOC} = \frac{\sum_{i=1}^x \left( \sum_{j=1}^n C_{ji} \right)}{X}$$

where:

$C_{TOC}$ =Concentration of TOC (minus methane and ethane), dry basis, parts per million by volume.

$C_{ji}$ =Concentration of sample component j of the sample i, dry basis, parts per million by volume.

n=Number of components in the sample.

x=Number of samples in the sample run.

(B) The total organic HAP concentration ( $C_{HAP}$ ) shall be computed according to the equation in paragraph (c)(3)(ii)(A) of this section except that only the organic HAP species shall be summed. The list of organic HAP's is provided in table 2 of subpart F of this part.

(4) Where Method 25A of 40 CFR part 60, appendix A is used, the following procedures shall be used to calculate parts per million by volume TOC concentration:

(i) Method 25A of 40 CFR part 60, appendix A shall be used only if a single organic HAP compound is greater than 50 percent of total organic HAP, by volume, in the process vent stream.

(ii) The process vent stream composition may be determined by either proc-

ess knowledge, test data collected using an appropriate EPA method or a method or data validated according to the protocol in Method 301 of appendix A of this part. Examples of information that could constitute process knowledge include calculations based on material balances, process stoichiometry, or previous test results provided the results are still relevant to the current process vent stream conditions.

(iii) The organic HAP used as the calibration gas for Method 25A of 40 CFR part 60, appendix A shall be the single organic HAP compound present at greater than 50 percent of the total organic HAP by volume.

(iv) The span value for Method 25A of 40 CFR part 60, appendix A shall be 50 parts per million by volume.

(v) Use of Method 25A of 40 CFR part 60, appendix A is acceptable if the response from the high-level calibration gas is at least 20 times the standard deviation of the response from the zero calibration gas when the instrument is zeroed on the most sensitive scale.

(vi) The owner or operator shall demonstrate that the concentration of TOC including methane and ethane measured by Method 25A of 40 CFR part 60, appendix A is below 25 parts per million by volume to be considered a Group 2 vent with an organic HAP concentration below 50 parts per million by volume and to qualify for the low concentration exclusion in §63.113(g) of this subpart.

(d) To determine the TRE index value, the owner or operator shall conduct a TRE determination and calculate the TRE index value according to the procedures in paragraph (d)(1) or (d)(2) of this section and the TRE equation in paragraph (d)(3) of this section.

(1) Engineering assessment may be used to determine process vent stream flow rate, net heating value, TOC emission rate, and total organic HAP emission rate for the representative operating condition expected to yield the lowest TRE index value.

(i) If the TRE value calculated using such engineering assessment and the TRE equation in paragraph (d)(3) of this section is greater than 4.0, then the owner or operator is not required to perform the measurements specified in paragraph (d)(2) of this section.

(ii) If the TRE value calculated using such engineering assessment and the TRE equation in paragraph (d)(3) of this section is less than or equal to 4.0, then the owner or operator is required to perform the measurements specified in paragraph (d)(2) of this section for group determination or consider the process vent a Group 1 vent and comply with the emission reduction specified in § 63.113(a) of this subpart.

(iii) Engineering assessment includes, but is not limited to, the following:

(A) Previous test results provided the tests are representative of current operating practices at the process unit.

(B) Bench-scale or pilot-scale test data representative of the process under representative operating conditions.

(C) Maximum flow rate, TOC emission rate, organic HAP emission rate, or net heating value limit specified or implied within a permit limit applicable to the process vent.

(D) Design analysis based on accepted chemical engineering principles, measurable process parameters, or physical or chemical laws or properties. Examples of analytical methods include, but are not limited to:

(1) Use of material balances based on process stoichiometry to estimate maximum organic HAP concentrations,

(2) Estimation of maximum flow rate based on physical equipment design such as pump or blower capacities,

(3) Estimation of TOC or organic HAP concentrations based on saturation conditions,

(4) Estimation of maximum expected net heating value based on the stream concentration of each organic compound or, alternatively, as if all TOC in the stream were the compound with the highest heating value.

(E) All data, assumptions, and procedures used in the engineering assessment shall be documented.

(2) Except as provided in paragraph (d)(1) of this section, process vent stream flow rate, net heating value, TOC emission rate, and total organic HAP emission rate shall be measured and calculated according to the procedures in paragraphs (d)(2)(i) through (d)(2)(v) of this section and used as

input to the TRE index value calculation in paragraph (d)(3) of this section.

(i) The vent stream volumetric flow rate ( $Q_s$ ), in standard cubic meters per minute at 20 °C, shall be determined using Method 2, 2A, 2C, or 2D of 40 CFR part 60, appendix A, as appropriate. If the vent stream tested passes through a final steam jet ejector and is not condensed, the stream volumetric flow shall be corrected to 2.3 percent moisture.

(ii) The molar composition of the process vent stream, which is used to calculate net heating value, shall be determined using the following methods:

(A) Method 18 of 40 CFR part 60, appendix A to measure the concentration of each organic compound.

(B) American Society for Testing and Materials D1946-77 to measure the concentration of carbon monoxide and hydrogen.

(C) Method 4 of 40 CFR part 60, appendix A to measure the moisture content of the stack gas.

(iii) The net heating value of the vent stream shall be calculated using the following equation:

$$H_T = K_i \left( \sum_{j=1}^n C_j H_j \right) (1 - B_{ws})$$

where:

$H_T$ =Net heating value of the sample, megaJoule per standard cubic meter, where the net enthalpy per mole of vent stream is based on combustion at 25 °C and 760 millimeters of mercury, but the standard temperature for determining the volume corresponding to one mole is 20 °C, as in the definition of  $Q_s$  (vent stream flow rate).

$K_i$ =Constant,  $1.740 \times 10^{-7}$  (parts per million)<sup>-1</sup> (gram-mole per standard cubic meter) (megaJoule per kilocalorie), where standard temperature for (gram-mole per standard cubic meter) is 20 °C.

$B_{ws}$ =Water vapor content of the vent stream, proportion by volume; except that if the vent stream passes through a final steam jet and is not condensed, it shall be assumed that  $B_{ws}=0.023$  in order to correct to 2.3 percent moisture.

$C_j$ =Concentration on a dry basis of compound  $j$  in parts per million, as measured for all organic compounds by Method 18 of 40 CFR part 60, appendix A and measured for hydrogen and carbon monoxide by American Society for Testing and Materials D1946-77 as indicated in paragraph (d)(2)(ii) of this section.

$H_j$ =Net heat of combustion of compound  $j$ , kilocalorie per gram-mole, based on combustion at 25 °C and 760 millimeters mercury. The heats of combustion of vent stream components shall be determined using American Society for Testing and Materials D2382-76 if published values are not available or cannot be calculated.

(iv) The emission rate of TOC (minus methane and ethane) ( $E_{\text{TOC}}$ ) and the emission rate of total organic HAP ( $E_{\text{HAP}}$ ) in the vent stream shall both be calculated using the following equation:

$$E = K_2 \left[ \sum_{j=1}^n C_j M_j \right] Q_s$$

where:

$E$ =Emission rate of TOC (minus methane and ethane) or emission rate of total organic HAP in the sample, kilograms per hour.

$K_2$ =Constant,  $2.494 \times 10^{-6}$  (parts per million)<sup>-1</sup> (gram-mole per standard cubic meter) (kilogram/gram) (minutes/hour), where standard temperature for (gram-mole per standard cubic meter) is 20 °C.

$C_j$ =Concentration on a dry basis of organic compound  $j$  in parts per million as measured by Method 18 of 40 CFR part 60, appendix A as indicated in paragraph (d)(2)(ii) of this section. If the TOC emission rate is being calculated,  $C_j$  includes all organic compounds measured minus methane and ethane; if the total organic HAP emission rate is being calculated, only organic HAP compounds listed in table 2 in subpart F of this part are included.

$M_j$ =Molecular weight of organic compound  $j$ , gram/gram-mole.

$Q_s$ =Vent stream flow rate, dry standard cubic meter per minute, at a temperature of 20 °C.

(v) In order to determine whether a vent stream is halogenated, the mass emission rate of halogen atoms contained in organic compounds shall be calculated.

(A) The vent stream concentration of each organic compound containing halogen atoms (parts per million by volume, by compound) shall be determined based on the following procedures:

(1) Process knowledge that no halogen or hydrogen halides are present in the process, or

(2) Applicable engineering assessment as discussed in paragraph (d)(1)(iii) of this section, or

(3) Concentration of organic compounds containing halogens measured by Method 18 of 40 CFR part 60, appendix A, or

(4) Any other method or data that has been validated according to the applicable procedures in Method 301 of appendix A of this part.

(B) The following equation shall be used to calculate the mass emission rate of halogen atoms:

$$E = K_2 Q \left( \sum_{j=1}^n \sum_{i=1}^m C_j * L_{j,i} * M_{j,i} \right)$$

where:

$E$ =mass of halogen atoms, dry basis, kilogram per hour.

$K_2$ =Constant,  $2.494 \times 10^{-6}$  (parts per million)<sup>-1</sup> (kilogram-mole per standard cubic meter) (minute/hour), where standard temperature is 20 °C.

$C_j$ =Concentration of halogenated compound  $j$  in the gas stream, dry basis, parts per million by volume.

$M_{j,i}$ =Molecular weight of halogen atom  $i$  in compound  $j$  of the gas stream, kilogram per kilogram-mole.

$L_{j,i}$ =Number of atoms of halogen  $i$  in compound  $j$  of the gas stream.

$Q$ =Flow rate of gas stream, dry standard cubic meters per minute, determined according to paragraph (d)(1) or (d)(2)(i) of this section.

$j$ =Halogenated compound  $j$  in the gas stream.

$i$ =Halogen atom  $i$  in compound  $j$  of the gas stream.

$n$ =Number of halogenated compounds  $j$  in the gas stream.

m=Number of different halogens i in each compound j of the gas stream.

(3) The owner or operator shall calculate the TRE index value of the vent

stream using the equations and procedures in this paragraph.

(i) The equation for calculating the TRE index for a vent stream controlled by a flare or incinerator is as follows:

$$\text{TRE} = \frac{1}{E_{\text{HAP}}} [a + b(Q_s) + c(H_T) + d(E_{\text{TOC}})]$$

where:

TRE=TRE index value.

$E_{\text{HAP}}$ =Hourly emission rate of total organic HAP, kilograms per hour, as calculated in paragraph (d)(1) or (d)(2)(iv) of this section.

$Q_s$ =Vent stream flow rate, standard cubic meters per minute, at a standard temperature of 20 °C, as calculated in paragraph (d)(1) or (d)(2)(i) of this section.

$H_T$ =Vent stream net heating value, megaJoules per standard cubic meter, as calculated in paragraph (d)(1) or (d)(2)(iii) of this section.

$E_{\text{TOC}}$ =Emission rate of TOC (minus methane and ethane), kilograms per hour, as calculated in paragraph (d)(1) or (d)(2)(iv) of this section.

a,b,c,d=Coefficients presented in table 1 of this subpart, selected in accordance with paragraphs (d)(3)(ii) and (iii) of this section.

(ii) The owner or operator of a non-halogenated vent stream shall calculate the TRE index value based on the use of a flare, a thermal incinerator with 0 percent heat recovery, and a thermal incinerator with 70 percent heat recovery and shall select the lowest TRE index value. The owner or operator shall use the applicable coefficients in table 1 of this subpart for nonhalogenated vent streams located within existing sources and the applicable coefficients in table 2 of this subpart for nonhalogenated vent streams located within new sources.

(iii) The owner or operator of a halogenated vent stream shall calculate the TRE index value based on the use of a thermal incinerator with 0 percent heat recovery, and a scrubber. The owner or operator shall use the applicable coefficients in table 1 of this sub-

part for halogenated vent streams located within existing sources and the applicable coefficients in table 2 of this subpart for halogenated vent streams located within new sources.

(e) The owner or operator of a Group 2 process vent shall recalculate the TRE index value, flow, or organic HAP concentration for each process vent, as necessary to determine whether the vent is Group 1 or Group 2, whenever process changes are made. Examples of process changes include, but are not limited to, changes in production capacity, production rate, feedstock type, or catalyst type, or whenever there is replacement, removal, or addition of recovery equipment. For purposes of this paragraph, process changes do not include: Process upsets; unintentional, temporary process changes; and changes that are within the range on which the original TRE calculation was based.

(1) The TRE index value, flow rate, or organic HAP concentration shall be recalculated based on measurements of vent stream flow rate, TOC, and organic HAP concentrations, and heating values as specified in §63.115 (a), (b), (c), and (d) of this subpart, as applicable, or on best engineering assessment of the effects of the change. Engineering assessments shall meet the specifications in paragraph (d)(1) of this section.

(2) Where the recalculated TRE index value is less than or equal to 1.0, or less than or equal to 4.0 but greater than 1.0, the recalculated flow rate is greater than or equal to 0.005 standard cubic meter per minute, or the recalculated concentration is greater than or equal to 50 parts per million by volume, the owner or operator shall submit a report as specified in §63.118 (g), (h), (i), or (j)

of this subpart and shall comply with the appropriate provisions in § 63.113 of this subpart by the dates specified in § 63.100 of subpart F of this part.

**§ 63.116 Process vent provisions—performance test methods and procedures to determine compliance.**

(a) When a flare is used to comply with § 63.113(a)(1) of this subpart, the owner or operator shall comply with the flare provisions in § 63.11(b) of subpart A of this part.

(1) The compliance determination required by § 63.6(h) of subpart A of this part shall be conducted using Method 22 of 40 CFR part 60, appendix A, to determine visible emissions.

(2) An owner or operator is not required to conduct a performance test to determine percent emission reduction or outlet organic HAP or TOC concentration when a flare is used.

(b) An owner or operator is not required to conduct a performance test when any control device specified in paragraphs (b)(1) through (b)(4) of this section is used.

(1) A boiler or process heater with a design heat input capacity of 44 megawatts or greater.

(2) A boiler or process heater into which the process vent stream is introduced with the primary fuel or is used as the primary fuel.

(3) A control device for which a performance test was conducted for determining compliance with an NSPS and the test was conducted using the same procedures specified in this section and no process changes have been made since the test.

(4) A boiler or process heater burning hazardous waste for which the owner or operator:

(i) Has been issued a final permit under 40 CFR part 270 and complies with the requirements of 40 CFR part 266, subpart H, or

(ii) Has certified compliance with the interim status requirements of 40 CFR part 266, subpart H.

(c) Except as provided in paragraphs (a) and (b) of this section, an owner or operator using a control device to comply with the organic HAP concentration limit or percent reduction efficiency requirements in § 63.113(a)(2) of this subpart shall conduct a perform-

ance test using the procedures in paragraphs (c)(1) through (c)(4) of this section. The organic HAP concentration and percent reduction may be measured as either total organic HAP or as TOC minus methane and ethane according to the procedures specified.

(1) Method 1 or 1A of 40 CFR part 60, appendix A, as appropriate, shall be used for selection of the sampling sites.

(i) For determination of compliance with the 98 percent reduction of total organic HAP requirement of § 63.113(a)(2) of this subpart, sampling sites shall be located at the inlet of the control device as specified in paragraphs (c)(1)(i)(A) and (c)(1)(i)(B) of this section, and at the outlet of the control device.

(A) The control device inlet sampling site shall be located after the final product recovery device.

(B) If a process vent stream is introduced with the combustion air or as a secondary fuel into a boiler or process heater with a design capacity less than 44 megawatts, selection of the location of the inlet sampling sites shall ensure the measurement of total organic HAP or TOC (minus methane and ethane) concentrations in all process vent streams and primary and secondary fuels introduced into the boiler or process heater.

(ii) For determination of compliance with the 20 parts per million by volume total organic HAP limit in § 63.113(a)(2) of this subpart, the sampling site shall be located at the outlet of the control device.

(2) The gas volumetric flow rate shall be determined using Method 2, 2A, 2C, or 2D of 40 CFR part 60, appendix A, as appropriate.

(3) To determine compliance with the 20 parts per million by volume total organic HAP limit in § 63.113(a)(2) of this subpart, the owner or operator shall use Method 18 of 40 CFR part 60, appendix A to measure either TOC minus methane and ethane or total organic HAP. Alternatively, any other method or data that has been validated according to the applicable procedures in Method 301 of appendix A of this part, may be used. The following procedures shall be used to calculate parts per million by volume concentration, corrected to 3 percent oxygen:

(i) The minimum sampling time for each run shall be 1 hour in which either an integrated sample or a minimum of four grab samples shall be taken. If grab sampling is used, then the samples shall be taken at approximately equal intervals in time, such as 15 minute intervals during the run.

(ii) The concentration of either TOC (minus methane or ethane) or total organic HAP shall be calculated according to paragraph (c)(3)(i)(A) or (c)(3)(i)(B) of this section.

(A) The TOC concentration ( $C_{TOC}$ ) is the sum of the concentrations of the individual components and shall be computed for each run using the following equation:

$$C_{TOC} = \sum_{i=1}^x \frac{\left( \sum_{j=1}^n C_{ji} \right)}{x}$$

where:

$C_{TOC}$ =Concentration of TOC (minus methane and ethane), dry basis, parts per million by volume.

$C_{ji}$ =Concentration of sample components j of sample i, dry basis, parts per million by volume.

n=Number of components in the sample.

x=Number of samples in the sample run.

(B) The total organic HAP concentration ( $C_{HAP}$ ) shall be computed according to the equation in paragraph (c)(3)(i)(A) of this section except that only the organic HAP species shall be summed. The list of organic HAP's is provided in table 2 of subpart F of this part.

(iii) The concentration of TOC or total organic HAP shall be corrected to 3 percent oxygen if a combustion device is the control device.

(A) The emission rate correction factor or excess air, integrated sampling and analysis procedures of Method 3B of 40 CFR part 60, appendix A shall be used to determine the oxygen concentration (% $O_{2d}$ ). The samples shall be taken during the same time that the TOC (minus methane or ethane) or total organic HAP samples are taken.

(B) The concentration corrected to 3 percent oxygen ( $C_c$ ) shall be computed using either of the following equations:

$$C_c = C_m \left( \frac{17.9}{20.9 - \%O_{2d}} \right)$$

where:

$C_c$ =Concentration of TOC or organic HAP corrected to 3 percent oxygen, dry basis, parts per million by volume.

$C_m$ =Concentration of TOC (minus methane and ethane) or organic HAP, dry basis, parts per million by volume.

% $O_{2d}$ =Concentration of oxygen, dry basis, percent by volume.

(4) To determine compliance with the 98 percent reduction requirement of §63.113(a)(2) of this subpart, the owner or operator shall use Method 18 of 40 CFR part 60, appendix A; alternatively, any other method or data that has been validated according to the applicable procedures in Method 301 of appendix A of this part may be used. The following procedures shall be used to calculate percent reduction efficiency:

(i) The minimum sampling time for each run shall be 1 hour in which either an integrated sample or a minimum of four grab samples shall be taken. If grab sampling is used, then the samples shall be taken at approximately equal intervals in time such as 15 minute intervals during the run.

(ii) The mass rate of either TOC (minus methane and ethane) or total organic HAP ( $E_i$ ,  $E_o$ ) shall be computed.

(A) The following equations shall be used:

$$E_i = K_2 \left( \sum_{j=1}^n C_{ij} M_{ij} \right) Q_i$$

$$E_o = K_2 \left( \sum_{j=1}^n C_{oj} M_{oj} \right) Q_o$$

where:

$C_{ij}$ ,  $C_{oj}$ =Concentration of sample component j of the gas stream at the inlet and outlet of the control device, respectively, dry basis, parts per million by volume.

$E_i$ ,  $E_o$ =Mass rate of TOC (minus methane and ethane) or total organic HAP at the inlet and outlet of the control device, respectively, dry basis, kilogram per hour.

$M_{ij}$ ,  $M_{oj}$ =Molecular weight of sample component  $j$  of the gas stream at the inlet and outlet of the control device, respectively, gram/gram-mole.

$Q_i$ ,  $Q_o$ =Flow rate of gas stream at the inlet and outlet of the control device, respectively, dry standard cubic meter per minute.

$K_2$ =Constant,  $2.494 \times 10^{-6}$  (parts per million)<sup>-1</sup> (gram-mole per standard cubic meter) (kilogram/gram) (minute/hour), where standard temperature (gram-mole per standard cubic meter) is 20 °C.

(B) Where the mass rate of TOC is being calculated, all organic compounds (minus methane and ethane) measured by Method 18 of 40 CFR part 60, appendix A are summed using the equation in paragraph (c)(4)(ii)(A) of this section.

(C) Where the mass rate of total organic HAP is being calculated, only the organic HAP species shall be summed using the equation in paragraph (c)(4)(ii)(A) of this section. The list of organic HAP's is provided in table 2 of subpart F of this part.

(iii) The percent reduction in TOC (minus methane and ethane) or total organic HAP shall be calculated as follows:

$$R = \frac{E_i - E_o}{E_i} (100)$$

where:

$R$ =Control efficiency of control device, percent.

$E_i$ =Mass rate of TOC (minus methane and ethane) or total organic HAP at the inlet to the control device as calculated under paragraph (c)(4)(ii) of this section, kilograms TOC per hour or kilograms organic HAP per hour.

$E_o$ =Mass rate of TOC (minus methane and ethane) or total organic HAP at the outlet of the control device, as calculated under paragraph (c)(4)(ii) of this section, kilograms TOC per hour or kilograms organic HAP per hour.

(iv) If the process vent stream entering a boiler or process heater with a design capacity less than 44 megawatts is introduced with the combustion air or as a secondary fuel, the weight-percent reduction of total organic HAP or TOC (minus methane and ethane) across the device shall be determined by comparing the TOC (minus methane and ethane) or total organic HAP in all combusted vent streams and primary and secondary fuels with the TOC (minus methane and ethane) or total organic HAP exiting the combustion device, respectively.

(d) An owner or operator using a combustion device followed by a scrubber or other control device to control halogenated process vent streams in compliance with §63.113(c)(1) of this subpart shall conduct a performance test to determine compliance with the control efficiency or emission limits for hydrogen halides and halogens.

(1) For an owner or operator determining compliance with the percent reduction of total hydrogen halides and halogens, sampling sites shall be located at the inlet and outlet of the scrubber or other control device used to reduce halogen emissions. For an owner or operator determining compliance with the less than 0.45 kilogram per hour outlet emission limit for total hydrogen halides and halogens, the sampling site shall be located at the outlet of the scrubber or other control device and prior to any releases to the atmosphere.

(2) Except as provided in paragraph (d)(5) of this section, Method 26 or Method 26A of 40 CFR part 60, appendix A, shall be used to determine the concentration, in milligrams per dry standard cubic meter, of total hydrogen halides and halogens that may be present in the vent stream. The mass emissions of each hydrogen halide and halogen compound shall be calculated from the measured concentrations and the gas stream flow rate.

(3) To determine compliance with the percent removal efficiency, the mass emissions for any hydrogen halides and halogens present at the inlet of the scrubber or other control device shall be summed together. The mass emissions of the compounds present at the outlet of the scrubber or other control

device shall be summed together. Percent reduction shall be determined by comparison of the summed inlet and outlet measurements.

(4) To demonstrate compliance with the less than 0.45 kilogram per hour outlet emission limit, the test results must show that the mass emission rate of total hydrogen halides and halogens measured at the outlet of the scrubber or other control device is below 0.45 kilogram per hour.

(5) The owner or operator may use any other method to demonstrate compliance if the method or data has been validated according to the applicable procedures of Method 301 of appendix A of this part.

(e) An owner or operator using a scrubber or other control technique to reduce the vent stream halogen atom mass emission rate to less than 0.45 kilogram per hour prior to a combustion control device in compliance with § 63.113(c)(2) of this subpart shall determine the halogen atom mass emission rate prior to the combustor according to the procedures in § 63.115(d)(2)(v) of this subpart.

**§ 63.117 Process vent provisions—reporting and recordkeeping requirements for group and TRE determinations and performance tests.**

(a) Each owner or operator subject to the control provisions for Group 1 vent streams in § 63.113(a) of this subpart or the provisions for Group 2 vent streams with a TRE index value greater than 1.0 but less than or equal to 4.0 in § 63.113(d) of this subpart shall:

(1) Keep an up-to-date, readily accessible record of the data specified in paragraphs (a)(4) through (a)(8) of this section, as applicable, and

(2) Include the data in paragraphs (a)(4) through (a)(8) of this section in the Notification of Compliance Status report as specified in § 63.152(b) of this subpart.

(3) If any subsequent TRE determinations or performance tests are conducted after the Notification of Compliance Status has been submitted, report the data in paragraphs (a)(4) through (a)(8) of this section in the next Periodic Report as specified in § 63.152(c) of this subpart.

(4) Record and report the following when using a combustion device to achieve a 98 weight percent reduction in organic HAP or an organic HAP concentration of 20 parts per million by volume, as specified in § 63.113(a)(2) of this subpart:

(i) The parameter monitoring results for incinerators, catalytic incinerators, boilers or process heaters specified in table 3 of this subpart, and averaged over the same time period of the performance testing.

(ii) For an incinerator, the percent reduction of organic HAP or TOC achieved by the incinerator determined as specified in § 63.116(c) of this subpart, or the concentration of organic HAP or TOC (parts per million by volume, by compound) determined as specified in § 63.116(c) of this subpart at the outlet of the incinerator on a dry basis corrected to 3 percent oxygen.

(iii) For a boiler or process heater, a description of the location at which the vent stream is introduced into the boiler or process heater.

(iv) For a boiler or process heater with a design heat input capacity of less than 44 megawatts and where the process vent stream is introduced with combustion air or used as a secondary fuel and is not mixed with the primary fuel, the percent reduction of organic HAP or TOC, or the concentration of organic HAP or TOC (parts per million by volume, by compound) determined as specified in § 63.116(c) of this subpart at the outlet of the combustion device on a dry basis corrected to 3 percent oxygen.

(5) Record and report the following when using a flare to comply with § 63.113(a)(1) of this subpart:

(i) Flare design (i.e., steam-assisted, air-assisted, or non-assisted);

(ii) All visible emission readings, heat content determinations, flow rate measurements, and exit velocity determinations made during the compliance determination required by § 63.116(a) of this subpart; and

(iii) All periods during the compliance determination when the pilot flame is absent.

(6) Record and report the following when using a scrubber following a combustion device to control a halogenated process vent stream:

(i) The percent reduction or scrubber outlet mass emission rate of total hydrogen halides and halogens as specified in §63.116(d) of this subpart;

(ii) The pH of the scrubber effluent; and

(iii) The scrubber liquid to gas ratio.

(7) Record and report the following when achieving and maintaining a TRE index value greater than 1.0 but less than 4.0 as specified in §63.113(a)(3) or §63.113(d) of this subpart:

(i) The parameter monitoring results for absorbers, condensers, or carbon adsorbers, as specified in table 4 of this subpart, and averaged over the same time period of the measurements of vent stream flow rate and concentration used in the TRE determination (both measured while the vent stream is normally routed and constituted), and

(ii) The measurements and calculations performed to determine the TRE index value of the vent stream.

(8) Record and report the halogen concentration in the process vent stream determined according to the procedures specified in §63.115(d)(2)(v) of this subpart.

(b) The owner or operator of a Group 2 process vent with a TRE index greater than 4.0 as specified in §63.113(e) of this subpart, shall maintain records and submit as part of the Notification of Compliance Status specified in §63.152 of this subpart, measurements, engineering assessments, and calculations performed to determine the TRE index value of the vent stream. Documentation of engineering assessments shall include all data, assumptions, and procedures used for the engineering assessments, as specified in §63.115(d)(1) of this subpart.

(c) Each owner or operator who elects to demonstrate that a process vent is a Group 2 process vent based on a flow rate less than 0.005 standard cubic meter per minute must submit to the Administrator the flow rate measurement using methods and procedures specified in §63.115 (a) and (b) of this subpart with the Notification of Compliance Status specified in §63.152 of this subpart.

(d) Each owner or operator who elects to demonstrate that a process vent is a Group 2 process vent based on

organic HAP or TOC concentration less than 50 parts per million by volume must submit to the Administrator an organic HAP or TOC concentration measurement using the methods and procedures specified in §63.115 (a) and (c) of this subpart with the Notification of Compliance Status specified in §63.152 of this subpart.

(e) If an owner or operator uses a control or recovery device other than those listed in tables 3 and 4 of this subpart or requests approval to monitor a parameter other than those specified in tables 3 and 4 of this subpart, the owner or operator shall submit a description of planned reporting and recordkeeping procedures as required under §63.151(f) or §63.152(e) of this subpart. The Administrator will specify appropriate reporting and recordkeeping requirements as part of the review of the Implementation Plan or permit application.

(f) For each parameter monitored according to tables 3 or 4 of this section, the owner or operator shall establish a range for the parameter that indicates proper operation of the control or recovery device. In order to establish the range, the information required in §63.152(b) of this subpart shall be submitted in the Notification of Compliance Status or the operating permit application or amendment.

**§63.118 Process vent provisions—Periodic reporting and recordkeeping requirements.**

(a) Each owner or operator using a control device to comply with §63.113 (a)(1) or (a)(2) of this subpart shall keep the following records up-to-date and readily accessible:

(1) Continuous records of the equipment operating parameters specified to be monitored under §63.114(a) of this subpart and listed in table 3 of this subpart or specified by the Administrator in accordance with §63.114(c) and §63.117(e) of this subpart. For flares, the hourly records and records of pilot flame outages specified in table 3 of this subpart shall be maintained in place of continuous records.

(2) Records of the daily average value of each continuously monitored parameter for each operating day, except as

provided in paragraphs (a)(2)(iv) and (a)(2)(v) of this section.

(i) The daily average shall be calculated as the average of all values for a monitored parameter recorded during the operating day, except as provided in paragraph (a)(2)(ii) of this section. The average shall cover a 24-hour period if operation is continuous, or the number of hours of operation per operating day if operation is not continuous.

(ii) Monitoring data recorded during periods of monitoring system breakdowns, repairs, calibration checks, and zero (low-level) and high-level adjustments shall not be included in computing the hourly or daily averages. Records shall be kept of the times and durations of all such periods and any other periods of process or control device operation when monitors are not operating.

(iii) The operating day shall be the period defined in the operating permit or the Notification of Compliance Status in §63.152(b) of this subpart. It may be from midnight to midnight or another daily period.

(iv) If all recorded values for a monitored parameter during an operating day are within the range established in the Notification of Compliance Status in §63.152(b) of this subpart or operating permit, the owner or operator may record that all values were within the range rather than calculating and recording a daily average for that operating day.

(v) For flares, records of the times and duration of all periods during which the pilot flame is absent shall be kept rather than daily averages.

(3) Hourly records of whether the flow indicator specified under §63.114(d)(1) of this subpart was operating and whether flow was detected at any time under the hour, as well as records of the times and durations of all periods when the vent stream is diverted from the control device or the monitor is not operating.

(4) Where a seal mechanism is used to comply with §63.114(d)(2) of this subpart, hourly records of flow are not required. In such cases, the owner or operator shall record that the monthly visual inspection of the seals or closure mechanism has been done, and shall

record the duration of all periods when the seal mechanism is broken, the bypass line valve position has changed, or the key for a lock-and-key type lock has been checked out, and records of any car-seal that has broken.

(b) Each owner or operator using a product recovery device or other means to achieve and maintain a TRE index value greater than 1.0 but less than 4.0 as specified in §63.114(a)(3) or §63.113(d) of this subpart shall keep the following records up-to-date and readily accessible:

(1) Continuous records of the equipment operating parameters specified to be monitored under §63.114(b) of this subpart and listed in table 4 of this subpart or specified by the Administrator in accordance with §63.114(c) of this subpart and §63.114(e) of this subpart and

(2) Records of the daily average value of each continuously monitored parameter for each operating day, except as provided in paragraph (b)(2)(iv) and (b)(2)(v) of this section.

(i) The daily average shall be calculated as the average of all values for a monitored parameter recorded during the operating day except as provided in paragraph (b)(2)(ii) of this section. The average shall cover a 24-hour period if operating is continuous, or the number of hours of operation per operating day if operation is not continuous.

(ii) Monitoring data recorded during periods of monitoring system breakdowns, repairs, calibration checks, and zero (low-level) and high-level adjustments shall not be included in computing the hourly or daily averages. Records shall be kept of the times and durations of all such periods and any other periods of process or control device operation when monitors are not operating.

(iii) The operating day shall be the period defined in the operating permit or the Notification of Compliance Status. It may be from midnight to midnight or another daily period.

(iv) If all recorded values for a monitored parameter during an operating day are within the range established in the Notification of Compliance Status or operating permit, the owner or operator may record that all values were

within the range rather than calculating and recording a daily average for that operating day.

(v) If carbon adsorber regeneration stream flow and carbon bed regeneration temperature are monitored, the records specified in table 4 of this subpart shall be kept instead of the daily averages.

(c) Each owner or operator subject to the provisions of this subpart and who elects to demonstrate compliance with the TRE index value greater than 4.0 under §63.113(e) of this subpart or greater than 1.0 under §63.113(a)(3) or §63.113(d) of this subpart shall keep up-to-date, readily accessible records of:

(1) Any process changes as defined in §63.115(e) of this subpart; and

(2) Any recalculation of the TRE index value pursuant to §63.115(e) of this subpart.

(d) Each owner or operator who elects to comply by maintaining a flow rate less than 0.005 standard cubic meter per minute under §63.113(f) of this subpart, shall keep up-to-date, readily accessible records of:

(1) Any process changes as defined in §63.115(e) of this subpart that increase the vent stream flow rate,

(2) Any recalculation or measurement of the flow rate pursuant to §63.115(e) of this subpart, and

(3) If the flow rate increases to 0.005 standard cubic meter per minute or greater as a result of the process change, the TRE determination performed according to the procedures of §63.115(d) of this subpart.

(e) Each owner or operator who elects to comply by maintaining an organic HAP concentration less than 50 parts per million by volume organic HAP concentration under §63.113(g) of this subpart shall keep up-to-date, readily accessible records of:

(1) Any process changes as defined in §63.115(e) of this subpart that increase the organic HAP concentration of the process vent stream,

(2) Any recalculation or measurement of the concentration pursuant to §63.115(e) of this subpart, and

(3) If the organic HAP concentration increases to 50 parts per million by volume or greater as a result of the process change, the TRE determination

performed according to the procedures of §63.115(d) of this subpart.

(f) Each owner or operator who elects to comply with the requirements of §63.113 of this subpart shall submit to the Administrator Periodic Reports of the following recorded information according to the schedule in §63.152 of this subpart.

(1) Reports of daily average values of monitored parameters for all operating days when the daily average values recorded under paragraphs (a) and (b) of this section were outside the ranges established in the Notification of Compliance Status or operating permit.

(2) For Group 1 points, reports of the duration of periods when monitoring data is not collected for each excursion caused by insufficient monitoring data as defined in §63.152(c)(2)(ii)(A) of this subpart.

(3) Reports of the times and durations of all periods recorded under paragraph (a)(3) of this section when the vent stream is diverted from the control device through a bypass line.

(4) Reports of all periods recorded under paragraph (a)(4) of this section in which the seal mechanism is broken, the bypass line valve position has changed, or the key to unlock the bypass line valve was checked out.

(5) Reports of the times and durations of all periods recorded under paragraph (a)(2)(v) of this section in which all pilot flames of a flare were absent.

(6) Reports of all carbon bed regeneration cycles during which the parameters recorded under paragraph (b)(2)(v) of this section were outside the ranges established in the Notification of Compliance Status or operating permit.

(g) Whenever a process change, as defined in §63.115(e) of this subpart, is made that causes a Group 2 process vent to become a Group 1 process vent, the owner or operator shall submit a report within 180 calendar days after the process change as specified in §63.151(j) of this subpart. The report shall include:

(1) A description of the process change;

(2) The results of the recalculation of the flow rate, organic HAP concentration, and TRE index value required

under § 63.115(e) of this subpart and recorded under paragraph (c), (d), or (e) of this section; and

(3) A statement that the owner or operator will comply with the provisions of § 63.113 of this subpart for Group 1 process vents by the dates specified in subpart F of this part.

(h) Whenever a process change, as defined in § 63.115(e) of this subpart, is made that causes a Group 2 process vent with a TRE greater than 4.0 to become a Group 2 process vent with a TRE less than 4.0, the owner or operator shall submit a report within 180 calendar days after the process change. The report may be submitted as part of the next periodic report. The report shall include:

(1) A description of the process change,

(2) The results of the recalculation of the TRE index value required under § 63.115(e) of this subpart and recorded under paragraph (c) of this section, and

(3) A statement that the owner or operator will comply with the requirements specified in § 63.113(d) of this subpart.

(i) Whenever a process change, as defined in § 63.115(e) of this subpart, is made that causes a Group 2 process vent with a flow rate less than 0.005 standard cubic meter per minute to become a Group 2 process vent with a flow rate of 0.005 standard cubic meter per minute or greater and a TRE index value less than or equal to 4.0, the owner or operator shall submit a report within 180 calendar days after the process change. The report may be submitted as part of the next periodic report. The report shall include:

(1) A description of the process change,

(2) The results of the recalculation of the flow rate and the TRE determination required under § 63.115(e) of this subpart and recorded under paragraph (d) of this section, and

(3) A statement that the owner or operator will comply with the requirements specified in § 63.113(d) of this subpart.

(j) Whenever a process change, as defined in § 63.115(e) of this subpart, is made that causes a Group 2 process vent with an organic HAP concentration less than 50 parts per million by

volume to become a Group 2 process vent with an organic HAP concentration of 50 parts per million by volume or greater and a TRE index value less than or equal to 4.0, the owner or operator shall submit a report within 180 calendar days after the process change. The report may be submitted as part of the next periodic report. The report shall include:

(1) A description of the process change,

(2) The results of the recalculation of the organic HAP concentration and the TRE determination required under § 63.115(e) of this subpart and recorded under paragraph (e) of this section, and

(3) A statement that the owner or operator will comply with the requirements specified in § 63.113(d) of this subpart.

(k) The owner or operator is not required to submit a report of a process change if one of the conditions listed in paragraph (k)(1), (k)(2), (k)(3), or (k)(4) of this section is met.

(1) The process change does not meet the definition of a process change in § 63.115(e) of this subpart, or

(2) The vent stream flow rate is recalculated according to § 63.115(e) of this subpart and the recalculated value is less than 0.005 standard cubic meter per minute, or

(3) The organic HAP concentration of the vent stream is recalculated according to § 63.115(e) of this subpart and the recalculated value is less than 50 parts per million by volume, or

(4) The TRE index value is recalculated according to § 63.115(e) of this subpart and the recalculated value is greater than 4.0.

**§ 63.119 Storage vessel provisions—reference control technology.**

(a) For each storage vessel to which this subpart applies, the owner or operator shall comply with the requirements of paragraphs (a)(1), (a)(2), (a)(3), and (a)(4) of this section according to the schedule provisions of § 63.100 of subpart F of this part.

(1) For each Group 1 storage vessel (as defined in table 5 of this subpart for existing sources and table 6 of this subpart for new sources) storing a liquid for which the maximum true vapor pressure of the total organic HAP's in

the liquid is less than 76.6 kilopascals, the owner or operator shall reduce HAP emissions to the atmosphere by operating and maintaining either a fixed roof and internal floating roof, an external floating roof, an external floating roof converted to an internal floating roof, or a closed vent system and control device in accordance with the requirements in paragraph (b), (c), (d), or (e) of this section, or equivalent as provided in § 63.121 of this subpart.

(2) For each Group 1 storage vessel (as defined in table 5 of this subpart for existing sources and table 6 of this subpart for new sources) storing a liquid for which the maximum true vapor pressure of the total organic HAP's in the liquid is greater than or equal to 76.6 kilopascals, the owner or operator shall operate and maintain a closed vent system and control device meeting the requirements specified in paragraph (e) of this section, or equivalent as provided in § 63.121 of this subpart.

(3) For each Group 2 storage vessel that is not part of an emissions average as described in § 63.150 of this subpart, the owner or operator shall comply with the recordkeeping requirement in § 63.123(a) of this subpart and is not required to comply with any other provisions in §§ 63.119 through 63.123 of this subpart.

(4) For each Group 2 storage vessel that is part of an emissions average, the owner or operator shall comply with the emissions averaging provisions in § 63.150 of this subpart.

(b) The owner or operator who elects to use a fixed roof and an internal floating roof, as defined in § 63.111 of this subpart, to comply with the requirements of paragraph (a)(1) of this section shall comply with the requirements specified in paragraphs (b)(1) through (b)(6) of this section.

NOTE: The intent of paragraphs (b)(1) and (b)(2) of this section is to avoid having a vapor space between the floating roof and the stored liquid for extended periods. Storage vessels may be emptied for purposes such as routine storage vessel maintenance, inspections, petroleum liquid deliveries, or transfer operations. Storage vessels where liquid is left on walls, as bottom clingage, or in pools due to floor irregularity are considered completely empty.

(1) The internal floating roof shall be floating on the liquid surface at all times except when the floating roof must be supported by the leg supports during the periods specified in paragraphs (b)(1)(i) through (b)(1)(iii) of this section.

(i) During the initial fill.

(ii) After the vessel has been completely emptied and degassed.

(iii) When the vessel is completely emptied before being subsequently refilled.

(2) When the floating roof is resting on the leg supports, the process of filling, emptying, or refilling shall be continuous and shall be accomplished as soon as possible.

(3) Each internal floating roof shall be equipped with a closure device between the wall of the storage vessel and the roof edge. Except as provided in paragraph (b)(3)(iv) of this section, the closure device shall consist of one of the devices listed in paragraph (b)(3)(i), (b)(3)(ii), or (b)(3)(iii) of this section.

(i) A liquid-mounted seal as defined in § 63.111 of this subpart.

(ii) A metallic shoe seal as defined in § 63.111 of this subpart.

(iii) Two seals mounted one above the other so that each forms a continuous closure that completely covers the space between the wall of the storage vessel and the edge of the internal floating roof. The lower seal may be vapor-mounted, but both must be continuous seals.

(iv) If the internal floating roof is equipped with a vapor-mounted seal as of December 31, 1992, the requirement for one of the seal options specified in paragraphs (b)(3)(i), (b)(3)(ii), and (b)(3)(iii) of this section does not apply until the earlier of the dates specified in paragraphs (b)(3)(iv)(A) and (b)(3)(iv)(B) of this section.

(A) The next time the storage vessel is emptied and degassed.

(B) No later than 10 years after April 22, 1994.

(4) Automatic bleeder vents are to be closed at all times when the roof is floating, except when the roof is being floated off or is being landed on the roof leg supports.

(5) Except as provided in paragraph (b)(5)(viii) of this section, each internal

floating roof shall meet the specifications listed in paragraphs (b)(5)(i) through (b)(5)(vii) of this section.

(i) Each opening in a noncontact internal floating roof except for automatic bleeder vents (vacuum breaker vents) and rim space vents is to provide a projection below the liquid surface.

(ii) Each opening in the internal floating roof except for leg sleeves, automatic bleeder vents, rim space vents, column wells, ladder wells, sample wells, and stub drains shall be equipped with a cover or lid. The cover or lid shall be equipped with a gasket.

(iii) Each penetration of the internal floating roof for the purposes of sampling shall be a sample well. Each sample well shall have a slit fabric cover that covers at least 90 percent of the opening.

(iv) Each automatic bleeder vent shall be gasketed.

(v) Each rim space vent shall be gasketed.

(vi) Each penetration of the internal floating roof that allows for passage of a ladder shall have a gasketed sliding cover.

(vii) Each penetration of the internal floating roof that allows for passage of a column supporting the fixed roof shall have a flexible fabric sleeve seal or a gasketed sliding cover.

(viii) If the internal floating roof does not meet any one of the specifications listed in paragraphs (b)(5)(i) through (b)(5)(vii) of this section as of December 31, 1992, the requirement for meeting those specifications does not apply until the earlier of the dates specified in paragraphs (b)(5)(viii)(A) and (b)(5)(viii)(B) of this section.

(A) The next time the storage vessel is emptied and degassed.

(B) No later than 10 years after April 22, 1994.

(6) Each cover or lid on any opening in the internal floating roof shall be closed (i.e., no visible gaps), except when the cover or lid must be open for access. Covers on each access hatch and each gauge float well shall be bolted or fastened so as to be air-tight when they are closed. Rim space vents are to be set to open only when the internal floating roof is not floating or when the pressure beneath the rim seal

exceeds the manufacturer's recommended setting.

(c) The owner or operator who elects to use an external floating roof, as defined in § 63.111 of this subpart, to comply with the requirements of paragraph (a)(1) of this section shall comply with the requirements specified in paragraphs (c)(1) through (c)(4) of this section.

(1) Each external floating roof shall be equipped with a closure device between the wall of the storage vessel and the roof edge.

(i) Except as provided in paragraph (c)(1)(iv) of this section, the closure device is to consist of two seals, one above the other. The lower seal is referred to as the primary seal and the upper seal is referred to as the secondary seal.

(ii) Except as provided in paragraph (c)(1)(v) of this section, the primary seal shall be either a metallic shoe seal or a liquid-mounted seal.

(iii) Except during the inspections required by § 63.120(b) of this subpart, both the primary seal and the secondary seal shall completely cover the annular space between the external floating roof and the wall of the storage vessel in a continuous fashion.

(iv) If the external floating roof is equipped with a liquid-mounted or metallic shoe primary seal as of December 31, 1992, the requirement for a secondary seal in paragraph (c)(1)(i) of this section does not apply until the earlier of the dates specified in paragraphs (c)(1)(iv)(A) and (c)(1)(iv)(B) of this section.

(A) The next time the storage vessel is emptied and degassed.

(B) No later than 10 years after April 22, 1994.

(v) If the external floating roof is equipped with a vapor-mounted primary seal and a secondary seal as of December 31, 1992, the requirement for a liquid-mounted or metallic shoe primary seal in paragraph (c)(1)(ii) of this section does not apply until the earlier of the dates specified in paragraphs (c)(1)(v)(A) and (c)(1)(v)(B) of this section.

(A) The next time the storage vessel is emptied and degassed.

(B) No later than 10 years after April 22, 1994.

(2) Each external floating roof shall meet the specifications listed in paragraphs (c)(2)(i) through (c)(2)(xii) of this section.

(i) Except for automatic bleeder vents (vacuum breaker vents) and rim space vents, each opening in the non-contact external floating roof shall provide a projection below the liquid surface except as provided in paragraph (c)(2)(xii) of this section.

(ii) Except for automatic bleeder vents, rim space vents, roof drains, and leg sleeves, each opening in the roof is to be equipped with a gasketed cover, seal or lid which is to be maintained in a closed position (i.e., no visible gap) at all times except when the cover or lid must be open for access. Covers on each access hatch and each gauge float well shall be bolted or fastened so as to be air-tight when they are closed.

(iii) Automatic bleeder vents are to be closed at all times when the roof is floating, except when the roof is being floated off or is being landed on the roof leg supports.

(iv) Rim space vents are to be set to open only when the roof is being floated off the roof leg supports or when the pressure beneath the rim seal exceeds the manufacturer's recommended setting.

(v) Automatic bleeder vents and rim space vents are to be gasketed.

(vi) Each roof drain that empties into the stored liquid is to be provided with a slotted membrane fabric cover that covers at least 90 percent of the area of the opening.

(vii) Each unslotted guide pole well shall have a gasketed sliding cover or a flexible fabric sleeve seal.

(viii) Each unslotted guide pole shall have on the end of the pole a gasketed cap which is closed at all times except when gauging the liquid level or taking liquid samples.

(ix) Each slotted guide pole well shall have a gasketed sliding cover or a flexible fabric sleeve seal.

(x) Each slotted guide pole shall have a gasketed float or other device which closes off the liquid surface from the atmosphere.

(xi) Each gauge hatch/sample well shall have a gasketed cover which is closed at all times except when the hatch or well must be open for access.

(xii) If each opening in a noncontact external floating roof except for automatic bleeder vents (vacuum breaker vents) and rim space vents does not provide a projection below the liquid surface as of December 31, 1992, the requirement for providing these projections below the liquid surface does not apply until the earlier of the dates specified in paragraphs (c)(2)(xii)(A) and (c)(2)(xii)(B) of this section.

(A) The next time the storage vessel is emptied and degassed.

(B) No later than 10 years after April 22, 1994.

NOTE: The intent of paragraphs (c)(3) and (c)(4) of this section is to avoid having a vapor space between the floating roof and the stored liquid for extended periods. Storage vessels may be emptied for purposes such as routine storage vessel maintenance, inspections, petroleum liquid deliveries, or transfer operations. Storage vessels where liquid is left on walls, as bottom clingage, or in pools due to floor irregularity are considered completely empty.

(3) The external floating roof shall be floating on the liquid surface at all times except when the floating roof must be supported by the leg supports during the periods specified in paragraphs (c)(3)(i) through (c)(3)(iii) of this section.

(i) During the initial fill.

(ii) After the vessel has been completely emptied and degassed.

(iii) When the vessel is completely emptied before being subsequently refilled.

(4) When the floating roof is resting on the leg supports, the process of filling, emptying, or refilling shall be continuous and shall be accomplished as soon as possible.

(d) The owner or operator who elects to use an external floating roof converted to an internal floating roof (i.e., fixed roof installed above external floating roof) to comply with paragraph (a)(1) of this section shall comply with paragraphs (d)(1) and (d)(2) of this section.

(1) Comply with the requirements for internal floating roof vessels specified in paragraphs (b)(1), (2), and (3) of this section; and

(2) Comply with the requirements for deck fittings that are specified for external floating roof vessels in paragraphs (c)(2)(i) through (c)(2)(xii) of this section.

(e) The owner or operator who elects to use a closed vent system and control device, as defined in §63.111 of this subpart, to comply with the requirements of paragraph (a)(1) or (a)(2) of this section shall comply with the requirements specified in paragraphs (e)(1) through (e)(5) of this section.

(1) Except as provided in paragraph (e)(2) of this section, the control device shall be designed and operated to reduce inlet emissions of total organic HAP by 95 percent or greater. If a flare is used as the control device, it shall meet the specifications described in the general control device requirements of §63.11(b) of subpart A of this part.

(2) If the owner or operator can demonstrate that a control device installed on a storage vessel on or before December 31, 1992 is designed to reduce inlet emissions of total organic HAP by greater than or equal to 90 percent but less than 95 percent, then the control device is required to be operated to reduce inlet emissions of total organic HAP by 90 percent or greater.

(3) Periods of planned routine maintenance of the control device, during which the control device does not meet the specifications of paragraph (e)(1) or (e)(2) of this section, as applicable, shall not exceed 240 hours per year.

(4) The specifications and requirements in paragraphs (e)(1) and (e)(2) of this section for control devices do not apply during periods of planned routine maintenance.

(5) The specifications and requirements in paragraphs (e)(1) and (e)(2) of this section for control devices do not apply during a control system malfunction.

**§63.120 Storage vessel provisions—procedures to determine compliance.**

(a) To demonstrate compliance with §63.119(b) of this subpart (storage vessel equipped with a fixed roof and internal floating roof) or with §63.119(d) of this subpart (storage vessel equipped with an external floating roof con-

verted to an internal floating roof), the owner or operator shall comply with the requirements in paragraphs (a)(1) through (a)(7) of this section.

(1) The owner or operator shall visually inspect the internal floating roof, the primary seal, and the secondary seal (if one is in service), according to the schedule specified in paragraphs (a)(2) and (a)(3) of this section.

(2) For vessels equipped with a single-seal system, the owner or operator shall perform the inspections specified in paragraphs (a)(2)(i) and (a)(2)(ii) of this section.

(i) Visually inspect the internal floating roof and the seal through manholes and roof hatches on the fixed roof at least once every 12 months after initial fill, or at least once every 12 months after the compliance date specified in §63.100 of subpart F of this part.

(ii) Visually inspect the internal floating roof, the seal, gaskets, slotted membranes, and sleeve seals (if any) each time the storage vessel is emptied and degassed, and at least once every 10 years after the compliance date specified in §63.100 of subpart F of this part.

(3) For vessels equipped with a double-seal system as specified in §63.119(b)(3)(iii) of this subpart, the owner or operator shall perform either the inspection required in paragraph (a)(3)(i) of this section or the inspections required in both paragraphs (a)(3)(ii) and (a)(3)(iii) of this section.

(i) The owner or operator shall visually inspect the internal floating roof, the primary seal, the secondary seal, gaskets, slotted membranes, and sleeve seals (if any) each time the storage vessel is emptied and degassed and at least once every 5 years after the compliance date specified in §63.100 of subpart F of this part; or

(ii) The owner or operator shall visually inspect the internal floating roof and the secondary seal through manholes and roof hatches on the fixed roof at least once every 12 months after initial fill, or at least once every 12 months after the compliance date specified in §63.100 of subpart F of this part, and

(iii) Visually inspect the internal floating roof, the primary seal, the secondary seal, gaskets, slotted membranes, and sleeve seals (if any) each time the vessel is emptied and degassed and at least once every 10 years after the compliance date specified in § 63.100 of subpart F of this part.

(4) If during the inspections required by paragraph (a)(2)(i) or (a)(3)(ii) of this section, the internal floating roof is not resting on the surface of the liquid inside the storage vessel and is not resting on the leg supports; or there is liquid on the floating roof; or the seal is detached; or there are holes or tears in the seal fabric; or there are visible gaps between the seal and the wall of the storage vessel, the owner or operator shall repair the items or empty and remove the storage vessel from service within 45 calendar days. If a failure that is detected during inspections required by paragraph (a)(2)(i) or (a)(3)(ii) of this section cannot be repaired within 45 calendar days and if the vessel cannot be emptied within 45 calendar days, the owner or operator may utilize up to 2 extensions of up to 30 additional calendar days each. Documentation of a decision to utilize an extension shall include a description of the failure, shall document that alternate storage capacity is unavailable, and shall specify a schedule of actions that will ensure that the control equipment will be repaired or the vessel will be emptied as soon as possible.

(5) Except as provided in paragraph (a)(6) of this section, for all the inspections required by paragraphs (a)(2)(ii), (a)(3)(i), and (a)(3)(iii) of this section, the owner or operator shall notify the Administrator in writing at least 30 calendar days prior to the refilling of each storage vessel to afford the Administrator the opportunity to have an observer present.

(6) If the inspection required by paragraph (a)(2)(ii), (a)(3)(i), or (a)(3)(iii) of this section is not planned and the owner or operator could not have known about the inspection 30 calendar days in advance of refilling the vessel, the owner or operator shall notify the Administrator at least 7 calendar days prior to the refilling of the storage vessel. Notification may be made by telephone and immediately followed by

written documentation demonstrating why the inspection was unplanned. Alternatively, the notification including the written documentation may be made in writing and sent so that it is received by the Administrator at least 7 calendar days prior to refilling.

(7) If during the inspections required by paragraph (a)(2)(ii), (a)(3)(i), or (a)(3)(iii) of this section, the internal floating roof has defects; or the primary seal has holes, tears, or other openings in the seal or the seal fabric; or the secondary seal has holes, tears, or other openings in the seal or the seal fabric; or the gaskets no longer close off the liquid surface from the atmosphere; or the slotted membrane has more than 10 percent open area, the owner or operator shall repair the items as necessary so that none of the conditions specified in this paragraph exist before refilling the storage vessel with organic HAP.

(b) To demonstrate compliance with § 63.119(c) of this subpart (storage vessel equipped with an external floating roof), the owner or operator shall comply with the requirements specified in paragraphs (b)(1) through (b)(10) of this section.

(1) Except as provided in paragraph (b)(7) of this section, the owner or operator shall determine the gap areas and maximum gap widths between the primary seal and the wall of the storage vessel, and the secondary seal and the wall of the storage vessel according to the frequency specified in paragraphs (b)(1)(i) through (b)(1)(iii) of this section.

(i) For an external floating roof vessel equipped with primary and secondary seals, measurements of gaps between the vessel wall and the primary seal shall be performed during the hydrostatic testing of the vessel or by the compliance date specified in § 63.100 of subpart F of this part, whichever occurs last, and at least once every 5 years thereafter.

(ii) For an external floating roof vessel equipped with a liquid-mounted or metallic shoe primary seal and without a secondary seal as provided for in § 63.119(c)(1)(iv) of this subpart, measurements of gaps between the vessel

wall and the primary seal shall be performed by the compliance date specified in § 63.100 of subpart F of this part and at least once per year thereafter, until a secondary seal is installed. When a secondary seal is installed above the primary seal, measurements of gaps between the vessel wall and both the primary and secondary seals shall be performed within 90 calendar days of installation of the secondary seal, and according to the frequency specified in paragraphs (b)(1)(i) and (b)(1)(iii) of this section thereafter.

(iii) For an external floating roof vessel equipped with primary and secondary seals, measurements of gaps between the vessel wall and the secondary seal shall be performed by the compliance date specified in § 63.100 of subpart F of this part and at least once per year thereafter.

(iv) If any storage vessel ceases to store organic HAP for a period of 1 year or more, or if the maximum true vapor pressure of the total organic HAP's in the stored liquid falls below the values defining Group 1 storage vessels specified in table 5 or table 6 of this subpart for a period of 1 year or more, measurements of gaps between the vessel wall and the primary seal, and gaps between the vessel wall and the secondary seal shall be performed within 90 calendar days of the vessel being refilled with organic HAP.

(2) Except as provided in paragraph (b)(7) of this section, the owner or operator shall determine gap widths and gap areas in the primary and secondary seals (seal gaps) individually by the procedures described in paragraphs (b)(2)(i) through (b)(2)(iii) of this section.

(i) Seal gaps, if any, shall be measured at one or more floating roof levels when the roof is not resting on the roof leg supports.

(ii) Seal gaps, if any, shall be measured around the entire circumference of the vessel in each place where a 0.32 centimeter diameter uniform probe passes freely (without forcing or binding against the seal) between the seal and the wall of the storage vessel. The circumferential distance of each such location shall also be measured.

(iii) The total surface area of each gap described in paragraph (b)(2)(ii) of

this section shall be determined by using probes of various widths to measure accurately the actual distance from the vessel wall to the seal and multiplying each such width by its respective circumferential distance.

(3) The owner or operator shall add the gap surface area of each gap location for the primary seal and divide the sum by the nominal diameter of the vessel. The accumulated area of gaps between the vessel wall and the primary seal shall not exceed 212 square centimeters per meter of vessel diameter and the width of any portion of any gap shall not exceed 3.81 centimeters.

(4) The owner or operator shall add the gap surface area of each gap location for the secondary seal and divide the sum by the nominal diameter of the vessel. The accumulated area of gaps between the vessel wall and the secondary seal shall not exceed 21.2 square centimeters per meter of vessel diameter and the width of any portion of any gap shall not exceed 1.27 centimeters. These seal gap requirements may be exceeded during the measurement of primary seal gaps as required by paragraph (b)(1)(i) and (b)(1)(ii) of this section.

(5) The primary seal shall meet the additional requirements specified in paragraphs (b)(5)(i) and (b)(5)(ii) of this section.

(i) Where a metallic shoe seal is in use, one end of the metallic shoe shall extend into the stored liquid and the other end shall extend a minimum vertical distance of 61 centimeters above the stored liquid surface.

(ii) There shall be no holes, tears, or other openings in the shoe, seal fabric, or seal envelope.

(6) The secondary seal shall meet the additional requirements specified in paragraphs (b)(6)(i) and (b)(6)(ii) of this section.

(i) The secondary seal shall be installed above the primary seal so that it completely covers the space between the roof edge and the vessel wall except as provided in paragraph (b)(4) of this section.

(ii) There shall be no holes, tears, or other openings in the seal or seal fabric.

(7) If the owner or operator determines that it is unsafe to perform the

seal gap measurements required in paragraphs (b)(1) and (b)(2) of this section or to inspect the vessel to determine compliance with paragraphs (b)(5) and (b)(6) of this section because the floating roof appears to be structurally unsound and poses an imminent or potential danger to inspecting personnel, the owner or operator shall comply with the requirements in either paragraph (b)(7)(i) or (b)(7)(ii) of this section.

(i) The owner or operator shall measure the seal gaps or inspect the storage vessel no later than 30 calendar days after the determination that the roof is unsafe, or

(ii) The owner or operator shall empty and remove the storage vessel from service no later than 45 calendar days after determining that the roof is unsafe. If the vessel cannot be emptied within 45 calendar days, the owner or operator may utilize up to 2 extensions of up to 30 additional calendar days each. Documentation of a decision to utilize an extension shall include an explanation of why it was unsafe to perform the inspection or seal gap measurement, shall document that alternate storage capacity is unavailable, and shall specify a schedule of actions that will ensure that the vessel will be emptied as soon as possible.

(8) The owner or operator shall repair conditions that do not meet requirements listed in paragraphs (b)(3), (b)(4), (b)(5), and (b)(6) of this section (i.e., failures) no later than 45 calendar days after identification, or shall empty and remove the storage vessel from service no later than 45 calendar days after identification. If during seal gap measurements required in paragraph (b)(1) and (b)(2) of this section or during inspections necessary to determine compliance with paragraphs (b)(5) and (b)(6) of this section a failure is detected that cannot be repaired within 45 calendar days and if the vessel cannot be emptied within 45 calendar days, the owner or operator may utilize up to 2 extensions of up to 30 additional calendar days each. Documentation of a decision to utilize an extension shall include a description of the failure, shall document that alternate storage capacity is unavailable, and shall specify a schedule of actions that will

ensure that the control equipment will be repaired or the vessel will be emptied as soon as possible.

(9) The owner or operator shall notify the Administrator in writing 30 calendar days in advance of any gap measurements required by paragraph (b)(1) or (b)(2) of this section to afford the Administrator the opportunity to have an observer present.

(10) The owner or operator shall visually inspect the external floating roof, the primary seal, secondary seal, and fittings each time the vessel is emptied and degassed.

(i) If the external floating roof has defects; the primary seal has holes, tears, or other openings in the seal or the seal fabric; or the secondary seal has holes, tears, or other openings in the seal or the seal fabric; or the gaskets no longer close off the liquid surface from the atmosphere; or the slotted membrane has more than 10 percent open area, the owner or operator shall repair the items as necessary so that none of the conditions specified in this paragraph exist before filling or refilling the storage vessel with organic HAP.

(ii) Except as provided in paragraph (b)(10)(iii) of this section, for all the inspections required by paragraph (b)(10) of this section, the owner or operator shall notify the Administrator in writing at least 30 calendar days prior to filling or refilling of each storage vessel with organic HAP to afford the Administrator the opportunity to inspect the storage vessel prior to refilling.

(iii) If the inspection required by paragraph (b)(10) of this section is not planned and the owner or operator could not have known about the inspection 30 calendar days in advance of refilling the vessel with organic HAP, the owner or operator shall notify the Administrator at least 7 calendar days prior to refilling of the storage vessel. Notification may be made by telephone and immediately followed by written documentation demonstrating why the inspection was unplanned. Alternatively, this notification including the written documentation may be made in writing and sent so that it is received by the Administrator at least 7 calendar days prior to the refilling.

(c) To demonstrate compliance with §63.119(d) of this subpart (storage vessel equipped with an external floating roof converted to an internal floating roof), the owner or operator shall comply with the requirements of paragraph (a) of this section.

(d) To demonstrate compliance with §63.119(e) of this subpart (storage vessel equipped with a closed vent system and control device) using a control device other than a flare, the owner or operator shall comply with the requirements in paragraphs (d)(1) through (d)(7) of this section.

(1) The owner or operator shall either prepare a design evaluation, which includes the information specified in paragraph (d)(1)(i) of this section, or submit the results of a performance test as described in paragraph (d)(1)(ii) of this section.

(i) The design evaluation shall include documentation demonstrating that the control device being used achieves the required control efficiency during reasonably expected maximum filling rate. This documentation is to include a description of the gas stream which enters the control device, including flow and organic HAP content under varying liquid level conditions, and the information specified in paragraphs (d)(1)(i)(A) through (d)(1)(i)(E) of this section, as applicable.

(A) If the control device receives vapors, gases or liquids, other than fuels, from emission points other than storage vessels subject to this subpart, the efficiency demonstration is to include consideration of all vapors, gases, and liquids, other than fuels, received by the control device.

(B) If an enclosed combustion device with a minimum residence time of 0.5 seconds and a minimum temperature of 760 °C is used to meet the emission reduction requirement specified in §63.119 (e)(1) or (e)(2), as applicable, documentation that those conditions exist is sufficient to meet the requirements of paragraph (d)(1)(i) of this section.

(C) Except as provided in paragraph (d)(1)(i)(B) of this section, for thermal incinerators, the design evaluation shall include the autoignition temperature of the organic HAP, the flow rate of the organic HAP emission stream, the combustion temperature, and the

residence time at the combustion temperature.

(D) For carbon adsorbers, the design evaluation shall include the affinity of the organic HAP vapors for carbon, the amount of carbon in each bed, the number of beds, the humidity of the feed gases, the temperature of the feed gases, the flow rate of the organic HAP emission stream, the desorption schedule, the regeneration stream pressure or temperature, and the flow rate of the regeneration stream. For vacuum desorption, pressure drop shall be included.

(E) For condensers, the design evaluation shall include the final temperature of the organic HAP vapors, the type of condenser, and the design flow rate of the organic HAP emission stream.

(ii) If the control device used to comply with §63.119(e) of this subpart is also used to comply with §63.113(a)(2), §63.126(b)(1), or §63.139(c) of this subpart, the performance test required by §63.116(c), §63.128(a), or §63.139(d)(1) of this subpart is acceptable to demonstrate compliance with §63.119(e) of this subpart. The owner or operator is not required to prepare a design evaluation for the control device as described in paragraph (d)(1)(i) of this section, if the performance tests meets the criteria specified in paragraphs (d)(1)(ii)(A) and (d)(1)(ii)(B) of this section.

(A) The performance test demonstrates that the control device achieves greater than or equal to the required control efficiency specified in §63.119 (e)(1) or (e)(2) of this subpart, as applicable; and

(B) The performance test is submitted as part of the Notification of Compliance Status required by §63.151(b) of this subpart.

(2) The owner or operator shall submit, as part of the Implementation Plan required by §63.151(c) of this subpart, the information specified in paragraph (d)(2)(i) of this section and in either (d)(2)(ii) or (d)(2)(iii) of this section.

(i) A description of the parameter or parameters to be monitored to ensure

that the control device is being properly operated and maintained, an explanation of the criteria used for selection of that parameter (or parameters), and the frequency with which monitoring will be performed; and either

(ii) The documentation specified in paragraph (d)(1)(i) of this section, if the owner or operator elects to prepare a design evaluation; or

(iii) The information specified in paragraph (d)(2)(iii) (A) and (B) of this section if the owner or operator elects to submit the results of a performance test.

(A) Identification of the storage vessel and control device for which the performance test will be submitted, and

(B) Identification of the emission point(s) that share the control device with the storage vessel and for which the performance test will be conducted.

(3) The owner or operator shall submit, as part of the Notification of Compliance Status required by § 63.152(b) of this subpart, the information specified in paragraphs (d)(3)(i) and, if applicable, (d)(3)(ii) of this section.

(i) The operating range for each monitoring parameter identified in the Implementation Plan. The specified operating range shall represent the conditions for which the control device is being properly operated and maintained.

(ii) Results of the performance test described in paragraph (d)(1)(ii) of this section.

(4) The owner or operator shall demonstrate compliance with the requirements of § 63.119(e)(3) of this subpart (planned routine maintenance of a control device, during which the control device does not meet the specifications of § 63.119 (e)(1) or (e)(2) of this subpart, as applicable, shall not exceed 240 hours per year) by including in each Periodic Report required by § 63.152(c) of this subpart the information specified in § 63.122(g)(1) of this subpart.

(5) The owner or operator shall monitor the parameters specified in the Notification of Compliance Status required in § 63.152(b) of this subpart or in the operating permit and shall operate and maintain the control device such that the monitored parameters remain

within the ranges specified in the Notification of Compliance Status.

(6) Except as provided in paragraph (d)(7) of this section, each closed vent system shall be inspected as specified in § 63.148 of this subpart. The initial and annual inspections required by § 63.148(b) of this subpart shall be done during filling of the storage vessel.

(7) For any fixed roof tank and closed vent system that are operated and maintained under negative pressure, the owner or operator is not required to comply with the requirements specified in § 63.148 of this subpart.

(e) To demonstrate compliance with § 63.119(e) of this subpart (storage vessel equipped with a closed vent system and control device) using a flare, the owner or operator shall comply with the requirements in paragraphs (e)(1) through (e)(6) of this section.

(1) The owner or operator shall perform the compliance determination specified in § 63.11(b) of subpart A of this part.

(2) The owner or operator shall submit, as part of the Notification of Compliance Status required by § 63.152(b) of this subpart, the information specified in paragraphs (e)(2)(i) through (e)(2)(iii) of this section.

(i) Flare design (i.e., steam-assisted, air-assisted, or non-assisted);

(ii) All visible emission readings, heat content determinations, flow rate measurements, and exit velocity determinations made during the compliance determination required by paragraph (e)(1) of this section; and

(iii) All periods during the compliance determination when the pilot flame is absent.

(3) The owner or operator shall demonstrate compliance with the requirements of § 63.119(e)(3) of this subpart (planned routine maintenance of a flare, during which the flare does not meet the specifications of § 63.119(e)(1) of this subpart, shall not exceed 240 hours per year) by including in each Periodic Report required by § 63.152(c) of this subpart the information specified in § 63.122(g)(1) of this subpart.

(4) The owner or operator shall continue to meet the general control device requirements specified in § 63.11(b) of subpart A of this part.

(5) Except as provided in paragraph (e)(6) of this section, each closed vent system shall be inspected as specified in § 63.148 of this subpart. The inspections required to be performed in accordance with § 63.148(c) of this subpart shall be done during filling of the storage vessel.

(6) For any fixed roof tank and closed vent system that is operated and maintained under negative pressure, the owner or operator is not required to comply with the requirements specified in § 63.148 of this subpart.

**§ 63.121 Storage vessel provisions—alternative means of emission limitation.**

(a) Determination of equivalence to the reduction in emissions achieved by the requirements of § 63.119 (b), (c), or (d) of this subpart will be evaluated according to § 63.102(b) of subpart F of this part.

(b) The determination of equivalence referred to in paragraph (a) of this section will be based on the application to the Administrator which shall include the information specified in either paragraph (b)(1) or (b)(2) of this section.

(1) Actual emissions tests that use full-size or scale-model storage vessels that accurately collect and measure all organic HAP emissions from a given control technique, and that accurately simulate wind and account for other emission variables such as temperature and barometric pressure, or

(2) An engineering analysis that the Administrator determines is an accurate method of determining equivalence.

**§ 63.122 Storage vessel provisions—reporting.**

(a) For each Group 1 storage vessel, the owner or operator shall comply with the requirements of paragraphs (a)(1) through (a)(5) of this section.

(1) The owner or operator shall submit an Initial Notification as required by § 63.151(b) of this subpart.

(2) The owner or operator shall submit an Implementation Plan as required by § 63.151(c) of this subpart and shall submit as part of the Implementation Plan the information specified in paragraph (b) of this section.

(3) The owner or operator shall submit a Notification of Compliance Status as required by § 63.152(b) of this subpart and shall submit as part of the Notification of Compliance Status the information specified in paragraph (c) of this section.

(4) The owner or operator shall submit Periodic Reports as required by § 63.152(c) of this subpart and shall submit as part of the Periodic Reports the information specified in paragraphs (d), (e), (f), and (g) of this section.

(5) The owner or operator shall submit, as applicable, other reports as required by § 63.152(d) of this subpart, containing the information specified in paragraph (h) of this section.

(b) An owner or operator who elects to comply with § 63.119(e) of this subpart by using a closed vent system and a control device other than a flare shall submit, as part of the Implementation Plan required by § 63.151(c) of this subpart, the information specified in § 63.120(d)(2)(i) of this subpart and the information specified in either § 63.120(d)(2)(ii) of this subpart or § 63.120(d)(2)(iii) of this subpart.

(c) An owner or operator who elects to comply with § 63.119(e) of this subpart by using a closed vent system and a control device shall submit, as part of the Notification of Compliance Status required by § 63.152(b) of this subpart, the information specified in either paragraph (c)(1) or (c)(2) of this section.

(1) If a control device other than a flare is used, the owner or operator shall submit the information specified in § 63.120(d)(3)(i) and, if applicable, (d)(3)(ii) of this subpart.

(2) If a flare is used, the owner or operator shall submit the information specified in § 63.120(e)(2)(i), (e)(2)(ii), and (e)(2)(iii) of this subpart.

(d) An owner or operator who elects to comply with § 63.119(b) of this subpart by using a fixed roof and an internal floating roof or with § 63.119(d) of this subpart by using an external floating roof converted to an internal floating roof shall submit, as part of the Periodic Report required under § 63.152(c) of this subpart, the results of each inspection conducted in accordance with § 63.120(a) of this subpart in

which a failure is detected in the control equipment.

(1) For vessels for which annual inspections are required under § 63.120 (a)(2)(i) or (a)(3)(ii) of this subpart, the specifications and requirements listed in paragraphs (d)(1)(i) through (d)(1)(iii) of this section apply.

(i) A failure is defined as any time in which the internal floating roof is not resting on the surface of the liquid inside the storage vessel and is not resting on the leg supports; or there is liquid on the floating roof; or the seal is detached from the internal floating roof; or there are holes, tears, or other openings in the seal or seal fabric; or there are visible gaps between the seal and the wall of the storage vessel.

(ii) Except as provided in paragraph (d)(1)(iii) of this section, each Periodic Report shall include the date of the inspection, identification of each storage vessel in which a failure was detected, and a description of the failure. The Periodic Report shall also describe the nature of and date the repair was made or the date the storage vessel was emptied.

(iii) If an extension is utilized in accordance with § 63.120(a)(4) of this subpart, the owner or operator shall, in the next Periodic Report, identify the vessel; include the documentation specified in § 63.120(a)(4) of this subpart; and describe the date the storage vessel was emptied and the nature of and date the repair was made.

(2) For vessels for which inspections are required under § 63.120 (a)(2)(ii), (a)(3)(i), or (a)(3)(iii) of this subpart, the specifications and requirements listed in paragraphs (d)(2)(i) and (d)(2)(ii) of this section apply.

(i) A failure is defined as any time in which the internal floating roof has defects; or the primary seal has holes, tears, or other openings in the seal or the seal fabric; or the secondary seal (if one has been installed) has holes, tears, or other openings in the seal or the seal fabric; or the gaskets no longer close off the liquid surface from the atmosphere; or the slotted membrane has more than 10 percent open area.

(ii) Each Periodic Report required under § 63.152(c) of this subpart shall include the date of the inspection, identification of each storage vessel in which

a failure was detected, and a description of the failure. The Periodic Report shall also describe the nature of and date the repair was made.

(e) An owner or operator who elects to comply with § 63.119(c) of this subpart by using an external floating roof shall meet the periodic reporting requirements specified in paragraphs (e)(1), (e)(2), and (e)(3) of this section.

(1) The owner or operator shall submit, as part of the Periodic Report required under § 63.152(c) of this subpart, documentation of the results of each seal gap measurement made in accordance with § 63.120(b) of this subpart in which the requirements of § 63.120 (b)(3), (b)(4), (b)(5), or (b)(6) of this subpart are not met. This documentation shall include the information specified in paragraphs (e)(1)(i) through (e)(1)(iv) of this section.

(i) The date of the seal gap measurement.

(ii) The raw data obtained in the seal gap measurement and the calculations described in § 63.120 (b)(3) and (b)(4) of this subpart.

(iii) A description of any condition specified in § 63.120 (b)(5) or (b)(6) of this subpart that is not met.

(iv) A description of the nature of and date the repair was made, or the date the storage vessel was emptied.

(2) If an extension is utilized in accordance with § 63.120(b)(7)(ii) or (b)(8) of this subpart, the owner or operator shall, in the next Periodic Report, identify the vessel; include the documentation specified in § 63.120(b)(7)(ii) or (b)(8) of this subpart, as applicable; and describe the date the vessel was emptied and the nature of and date the repair was made.

(3) The owner or operator shall submit, as part of the Periodic Report required under § 63.152(c) of this subpart, documentation of any failures that are identified during visual inspections required by § 63.120(b)(10) of this subpart. This documentation shall meet the specifications and requirements in paragraphs (e)(3)(i) and (e)(3)(ii) of this section.

(i) A failure is defined as any time in which the external floating roof has defects; or the primary seal has holes, or other openings in the seal or the seal fabric; or the secondary seal has holes,

tears, or other openings in the seal or the seal fabric; or the gaskets no longer close off the liquid surface from the atmosphere; or the slotted membrane has more than 10 percent open area.

(ii) Each Periodic Report required under § 63.152(c) of this subpart shall include the date of the inspection, identification of each storage vessel in which a failure was detected, and a description of the failure. The periodic report shall also describe the nature of and date the repair was made.

(f) An owner or operator who elects to comply with § 63.119(d) of this subpart by using an external floating roof converted to an internal floating roof shall comply with the periodic reporting requirements of paragraph (d) of this section.

(g) An owner or operator who elects to comply with § 63.119(e) of this subpart by installing a closed vent system and control device shall submit, as part of the next Periodic Report required by § 63.152(c) of this subpart, the information specified in paragraphs (g)(1) through (g)(3) of this section.

(1) As required by § 63.120(d)(4) and § 63.120(e)(3) of this subpart, the Periodic Report shall include the information specified in paragraphs (g)(1)(i) and (g)(1)(ii) of this section for those planned routine maintenance operations that would require the control device not to meet the requirements of § 63.119 (e)(1) or (e)(2) of this subpart, as applicable.

(i) A description of the planned routine maintenance that is anticipated to be performed for the control device during the next 6 months. This description shall include the type of maintenance necessary, planned frequency of maintenance, and lengths of maintenance periods.

(ii) A description of the planned routine maintenance that was performed for the control device during the previous 6 months. This description shall include the type of maintenance performed and the total number of hours during those 6 months that the control device did not meet the requirements of § 63.119 (e)(1) or (e)(2) of this subpart, as applicable, due to planned routine maintenance.

(2) If a control device other than a flare is used, the Periodic Report shall describe each occurrence when the monitored parameters were outside of the parameter ranges documented in the Notification of Compliance Status in accordance with § 63.120(d)(3)(i) of this subpart. The description shall include the information specified in paragraphs (g)(2)(i) and (g)(2)(ii) of this section.

(i) Identification of the control device for which the measured parameters were outside of the established ranges, and

(ii) Cause for the measured parameters to be outside of the established ranges.

(3) If a flare is used, the Periodic Report shall describe each occurrence when the flare does not meet the general control device requirements specified in § 63.11(b) of subpart A of this part and shall include the information specified in paragraphs (g)(3)(i) and (g)(3)(ii) of this section.

(i) Identification of the flare which does not meet the general requirements specified in § 63.11(b) of subpart A of this part, and

(ii) Reason the flare did not meet the general requirements specified in § 63.11(b) of subpart A of this part.

(h) An owner or operator who elects to comply with § 63.119 (b), (c), or (d) of this subpart shall submit, as applicable, the reports specified in paragraphs (h)(1) and (h)(2) of this section.

(1) In order to afford the Administrator the opportunity to have an observer present, the owner or operator shall notify the Administrator of the refilling of a storage vessel that has been emptied and degassed.

(i) If the storage vessel is equipped with an internal floating roof as specified in § 63.119(b) of this subpart, the notification shall meet the requirements of either § 63.120 (a)(5) or (a)(6) of this subpart, as applicable.

(ii) If the storage vessel is equipped with an external floating roof as specified in § 63.119(c) of this subpart, the notification shall meet the requirements of either § 63.120 (b)(10)(ii) or (b)(10)(iii) of this subpart, as applicable.

(iii) If the storage vessel is equipped with an external floating roof converted into an internal floating roof as

specified in §63.119(d) of this subpart, the notification shall meet the requirements of either §63.120 (a)(5) or (a)(6) of this subpart, as applicable.

(2) In order to afford the Administrator the opportunity to have an observer present, the owner or operator of a storage vessel equipped with an external floating roof as specified in §63.119(c) of this subpart shall notify the Administrator of any seal gap measurements. This notification shall meet the requirements of §63.120(b)(9) of this subpart.

**§63.123 Storage vessel provisions—recordkeeping.**

(a) Each owner or operator of a Group 1 or Group 2 storage vessel shall keep readily accessible records showing the dimensions of the storage vessel and an analysis showing the capacity of the storage vessel. This record shall be kept as long as the storage vessel retains Group 1 or Group 2 status and is in operation. For each Group 2 storage vessel, the owner or operator is not required to comply with any other provisions of §§63.119 through 63.123 of this subpart other than those required by this paragraph unless such vessel is part of an emissions average as described in §63.150 of this subpart.

(b) Each owner or operator shall keep a record of all reports submitted in accordance with §63.122 of this subpart, including the Initial Notification, Implementation Plan, Notification of Compliance Status, Periodic Reports, and other reports.

(c) An owner or operator who elects to comply with §63.119(b) of this subpart shall keep a record that each inspection required by §63.120(a) of this subpart was performed.

(d) An owner or operator who elects to comply with §63.119(c) of this subpart shall keep records describing the results of each seal gap measurement made in accordance with §63.120(b) of this subpart. The records shall include the date of the measurement, the raw data obtained in the measurement, and the calculations described in §63.120(b)(3) and (4) of this subpart.

(e) An owner or operator who elects to comply with §63.119(d) of this subpart shall keep a record that each in-

spection required by §63.120 (a) and (c) of this subpart was performed.

(f) An owner or operator who elects to comply with §63.119(e) of this subpart shall keep in a readily accessible location the records specified in paragraphs (f)(1) and (f)(2) of this section.

(1) A record of the measured values of the parameters monitored in accordance with §63.120(d)(5) of this subpart.

(2) A record of the planned routine maintenance performed on the control device including the duration of each time the control device does not meet the specifications of §63.119 (e)(1) or (e)(2) of this subpart, as applicable, due to the planned routine maintenance. Such a record shall include the information specified in paragraphs (f)(2)(i) and (f)(2)(ii) of this section.

(i) The first time of day and date the requirements of §63.119 (e)(1) or (e)(2) of this subpart, as applicable, were not met at the beginning of the planned routine maintenance, and

(ii) The first time of day and date the requirements of §63.119 (e)(1) or (e)(2) of this subpart, as applicable, were met at the conclusion of the planned routine maintenance.

(g) An owner or operator who elects to utilize an extension in emptying a storage vessel in accordance with §63.120 (a)(4), (b)(7)(ii), or (b)(8) of this subpart shall keep in a readily accessible location, the documentation specified in §63.120 (a)(4), (b)(7)(ii), or (b)(8), as applicable.

**§63.124–63.125 [Reserved]**

**§63.126 Transfer operations provisions—reference control technology.**

(a) For each Group 1 transfer rack the owner or operator shall equip each transfer rack with a vapor collection system and control device.

(1) Each vapor collection system shall be designed and operated to collect the organic HAP vapors displaced from tank trucks or railcars during loading, and to route the collected HAP vapors to a control device as provided in paragraph (b) of this section.

(2) Each vapor collection system shall be designed and operated such that organic HAP vapors collected at one loading arm will not pass through

another loading arm in the rack to the atmosphere.

(3) Whenever organic HAP emissions are vented to a control device used to comply with the provisions of this subpart, such control device shall be operating.

(b) For each Group 1 transfer rack the owner or operator shall comply with paragraph (b)(1), (b)(2), or (b)(3) of this section.

(1) Use a control device to reduce emissions of total organic HAP's by 98 weight-percent or to an exit concentration of 20 parts per million by volume, on a dry basis, corrected to 3 percent oxygen, whichever is less stringent. If a boiler or process heater is used to comply with the percent reduction requirement, then the vent stream shall be introduced into the flame zone of such a device.

(2) Reduce emissions of organic HAP's using a flare.

(i) The flare shall comply with the requirements of §63.11(b) of subpart A of this part.

(ii) Halogenated vent streams, as defined in §63.111 of this subpart, shall not be vented to a flare.

(3) Reduce emissions of organic HAP using a vapor balancing system designed and operated to collect organic HAP vapors displaced from tank trucks or railcars during loading; and to route the collected HAP vapors to the storage vessel from which the liquid being loaded originated, or to compress collected HAP vapors and commingle the liquid with the raw feed of a chemical manufacturing process unit.

(c) For each Group 2 transfer rack, the owner or operator shall maintain records as required in §63.130(f). No other provisions for transfer racks apply to the Group 2 transfer rack.

(d) Halogenated emission streams from Group 1 transfer racks that are combusted shall be controlled according to paragraph (d)(1) or (d)(2) of this section. Determination of whether a vent stream is halogenated shall be made using procedures in (d)(3).

(1) If a combustion device is used to comply with paragraph (b)(1) of this section for a halogenated vent stream, then the vent stream shall be ducted from the combustion device to an additional control device, including, but

not limited to, a scrubber before it is discharged to the atmosphere.

(i) Except as provided in paragraph (d)(1)(ii) of this section, the additional control device shall reduce overall emissions of hydrogen halides and halogens, as defined in §63.111 of this subpart, by 99 percent or shall reduce the outlet mass emission rate of total hydrogen halides and halogens to 0.45 kilograms per hour or less, whichever is less stringent.

(ii) If a scrubber or other halogen control device was installed prior to December 31, 1992, the control device shall reduce overall emissions of hydrogen halides and halogens, as defined in §63.111 of this subpart, by 95 percent or shall reduce the outlet mass of total hydrogen halides and halogens to less than 0.45 kilograms per hour, whichever is less stringent.

(2) A control device, such as a scrubber, or other technique may be used to make the vent stream nonhalogenated by reducing the vent stream halogen atom mass emission rate to less than 0.45 kilograms per hour prior to any combustion control device used to comply with the requirements of paragraphs (b)(1) or (b)(2) of this section.

(3) In order to determine whether a vent stream is halogenated, the mass emission rate of halogen atoms contained in organic compounds shall be calculated.

(i) The vent stream concentration of each organic compound containing halogen atoms (parts per million by volume by compound) shall be determined based on the following procedures:

(A) Process knowledge that no halogen or hydrogen halides are present in the process, or

(B) Applicable engineering assessment as specified in §63.115(d)(1)(iii) of this subpart, or

(C) Concentration of organic compounds containing halogens measured by Method 18 of 40 CFR part 60, appendix A, or

(D) Any other method or data that has been validated according to the applicable procedures in Method 301 of appendix A of this part.

(ii) The following equation shall be used to calculate the mass emission rate of halogen atoms:

$$E = K_2 V_s \left( \sum_{j=1}^n \sum_{i=1}^m C_j * L_{ji} * M_{ji} \right)$$

where:

E=Mass of halogen atoms, dry basis, kilograms per hour.

$K_2$ =Constant,  $2.494 \times 10^{-6}$  (parts per million)<sup>-1</sup> (kilogram-mole per standard cubic meter) (minute/hour), where standard temperature is 20 °C.

$C_j$ =Concentration of halogenated compound j in the gas stream, dry basis, parts per million by volume.

$M_{ji}$ =Molecular weight of halogen atom i in compound j of the gas stream, kilogram per kilogram-mole.

$L_{ji}$ =Number of atoms of halogen i in compound j of the gas stream.

$V_s$ =Flow rate of gas stream, dry standard cubic meters per minute, determined according to § 63.128(a)(8) of this subpart.

j=Halogenated compound j in the gas stream.

i=Halogen atom i in compound j of the gas stream.

n=Number of halogenated compounds j in the gas stream.

m=Number of different halogens i in each compound j of the gas stream.

(e) For each Group 1 transfer rack the owner or operator shall load organic HAP's into only tank trucks and railcars which:

(1) Have a current certification in accordance with the U. S. Department of Transportation pressure test requirements of 49 CFR part 180 for tank trucks and 49 CFR 173.31 for railcars; or

(2) Have been demonstrated to be vapor-tight within the preceding 12 months, as determined by the procedures in § 63.128(f) of this subpart. Vapor-tight means that the truck or railcar tank will sustain a pressure change of not more than 750 pascals within 5 minutes after it is pressurized to a minimum of 4,500 pascals.

(f) The owner or operator of a transfer rack subject to the provisions of this subpart shall load organic HAP's to only tank trucks or railcars equipped with vapor collection equipment that is compatible with the transfer rack's vapor collection system.

(g) The owner or operator of a transfer rack subject to this subpart shall load organic HAP's to only tank trucks or railcars whose collection systems are connected to the transfer rack's vapor collection systems.

(h) The owner or operator of a transfer rack subject to the provisions of this subpart shall ensure that no pressure-vacuum vent in the transfer rack's vapor collection system or in the organic HAP loading equipment of each tank truck or railcar shall begin to open during loading.

(i) Each valve in the vent system that would lead the vent stream to the atmosphere, either directly or indirectly, shall be secured closed using a car seal or a lock-and-key type configuration, or shall be equipped with a flow indicator. Equipment such as low leg drains, high point bleeds, analyzer vents, open-ended valves or lines, and pressure relief valves needed for safety purposes are not subject to this paragraph.

#### § 63.127 Transfer operations provisions—monitoring requirements.

(a) Each owner or operator of a Group 1 transfer rack equipped with a combustion device used to comply with the 98 percent total organic HAP reduction or 20 parts per million by volume outlet concentration requirements in § 63.126(b)(1) of this subpart shall install, calibrate, maintain, and operate according to the manufacturers' specifications the monitoring equipment specified in paragraph (a)(1), (a)(2), (a)(3), or (a)(4) of this section, as appropriate.

(1) Where an incinerator is used, a temperature monitoring device equipped with a continuous recorder is required.

(i) Where an incinerator other than a catalytic incinerator is used, a temperature monitoring device shall be installed in the firebox or in the ductwork immediately downstream of the firebox in a position before any substantial heat exchange occurs.

(ii) Where a catalytic incinerator is used, temperature monitoring devices shall be installed in the gas stream immediately before and after the catalyst bed.

(2) Where a flare is used, a device (including but not limited to a thermocouple, infrared sensor, or an ultra-violet beam sensor) capable of continuously detecting the presence of a pilot flame is required.

(3) Where a boiler or process heater with a design heat input capacity less than 44 megawatts is used, a temperature monitoring device in the firebox equipped with a continuous recorder is required. Any boiler or process heater in which all vent streams are introduced with the primary fuel or are used as the primary fuel is exempt from this requirement.

(4) Where a scrubber is used with an incinerator, boiler, or process heater in the case of halogenated vent streams, the following monitoring equipment is required for the scrubber:

(i) A pH monitoring device equipped with a continuous recorder shall be installed to monitor the pH of the scrubber effluent.

(ii) Flow meters equipped with continuous recorders shall be located at the scrubber influent for liquid flow and the scrubber inlet for gas stream flow.

(b) Each owner or operator of a Group 1 transfer rack that uses a recovery device to comply with the 98 percent organic HAP reduction or 20 parts per million by volume HAP concentration requirements in § 63.126(b)(1) of this subpart shall install either an organic monitoring device equipped with a continuous recorder, or the monitoring equipment specified in paragraph (b)(1), (b)(2), or (b)(3) of this section, depending on the type of recovery device used. All monitoring equipment shall be installed, calibrated, and maintained according to the manufacturer's specifications.

(1) Where an absorber is used, a scrubbing liquid temperature monitoring device equipped with a continuous recorder shall be used; and a specific gravity monitoring device equipped with a continuous recorder shall be used.

(2) Where a condenser is used, a condenser exit (product side) temperature monitoring device equipped with a continuous recorder shall be used.

(3) Where a carbon adsorber is used, an integrating regeneration stream

flow monitoring device having an accuracy of  $\pm 10$  percent, capable of recording the total regeneration stream mass flow for each regeneration cycle; and a carbon bed temperature monitoring device, capable of recording the temperature of the carbon bed after regeneration and within 15 minutes of completing any cooling cycle shall be used.

(c) An owner or operator of a Group 1 transfer rack may request approval to monitor parameters other than those listed in paragraph (a) or (b) of this section. The request shall be submitted according to the procedures specified in § 63.151(f) or § 63.152(e) of this subpart. Approval shall be requested if the owner or operator:

(1) Seeks to demonstrate compliance with the standards specified in § 63.126(b) of this subpart with a control device other than an incinerator, boiler, process heater, flare, absorber, condenser, or carbon adsorber; or

(2) Uses one of the control devices listed in paragraphs (a) and (b) of this section, but seeks to monitor a parameter other than those specified in paragraphs (a) and (b) of this subpart.

(d) The owner or operator of a Group 1 transfer rack using a vent system that contains by-pass lines that could divert a vent stream flow away from the control device used to comply with § 63.126(b) of this subpart shall comply with paragraph (d)(1) or (d)(2) of this section. Equipment such as low leg drains, high point bleeds, analyzer vents, open-ended valves or lines, and pressure relief valves needed for safety purposes are not subject to this paragraph.

(1) Install, calibrate, maintain, and operate a flow indicator that determines whether vent stream flow is present at least once every 15 minutes. Records shall be generated as specified in § 63.130(b) of this subpart. The flow indicator shall be installed at the entrance to any by-pass line that could divert the vent stream away from the control device to the atmosphere; or

(2) Secure the by-pass line valve in the closed position with a car-seal or a lock-and-key type configuration.

(i) A visual inspection of the seal or closure mechanism shall be performed at least once every month to ensure that the valve is maintained in the

closed position and the vent stream is not diverted through the by-pass line.

(ii) If a car-seal has been broken or a valve position changed, the owner or operator shall record that the vent stream has been diverted. The car-seal or lock-and-key combination shall be returned to the secured position as soon as practicable but not later than 15 calendar days after the change in position is detected.

(e) The owner or operator shall establish a range that indicates proper operation of the control device for each parameter monitored under paragraphs (a), (b), and (c) of this section. In order to establish the range, the information required in § 63.152(b)(2) of this subpart shall be submitted in the Notification of Compliance Status or the operating permit application or amendment.

**§ 63.128 Transfer operations provisions—test methods and procedures.**

(a) A performance test is required for determining compliance with the reduction of total organic HAP emissions in § 63.126(b) of this subpart for all control devices except as specified in paragraph (c) of this section. Performance test procedures are as follows:

(1) For control devices shared between transfer racks and process vents, the performance test procedures in § 63.116(c) of this subpart shall be followed.

(2) A performance test shall consist of three runs.

(3) All testing equipment shall be prepared and installed as specified in the appropriate test methods.

(4) For control devices shared between multiple arms that load simultaneously, the minimum sampling time for each run shall be 1 hour in which either an integrated sample or a minimum of four grab samples shall be taken. If grab sampling is used, then the samples shall be taken at approximately equal intervals in time, such as 15-minute intervals during the run.

(5) For control devices that are capable of continuous vapor processing but do not meet the conditions in (a)(7)(i)(B) of this section.

(A) Sampling sites shall be located at the inlet and outlet of the control de-

vice, except as provided in paragraph (a)(7)(i)(B) of this section.

(B) If a vent stream is introduced with the combustion air or as a secondary fuel into a boiler or process heater with a design capacity less than 44 megawatts, selection of paragraph (a)(1) or (a)(4) of this section, each run shall represent at least one complete filling period, during which liquid organic HAP's are loaded, and samples shall be collected using integrated sampling or grab samples taken at least four times per hour at approximately equal intervals of time, such as 15-minute intervals.

(6) For intermittent vapor processing systems that do not meet the conditions in paragraph (a)(1) or (a)(4) of this section, each run shall represent at least one complete control device cycle, and samples shall be collected using integrated sampling or grab samples taken at least four times per hour at approximately equal intervals of time, such as 15-minute intervals.

(7) Method 1 or 1A of 40 CFR part 60, appendix A, as appropriate, shall be used for selection of sampling sites.

(i) For an owner or operator complying with the 98-percent total organic HAP reduction requirements in § 63.126(b)(1) of this subpart, sampling sites shall be located as specified in paragraph (a)(7)(i)(A) or (a)(7)(i)(B) of this section.

(A) Sampling sites shall be located at the inlet and outlet of the control device, except as provided in paragraph (a)(7)(i)(B) of this section.

(B) If a vent stream is introduced with the combustion air or as a secondary fuel into a boiler or process heater with a design capacity less than 44 megawatts, selection of the location of the inlet sampling sites shall ensure the measurement of total organic HAP or TOC (minus methane and ethane) concentrations in all vent streams and primary and secondary fuels introduced into the boiler or process heater. A sampling site shall also be located at the outlet of the boiler or process heater.

(ii) For an owner or operator complying with the 20 parts per million by volume limit in § 63.126(b)(1) of this subpart, the sampling site shall be located at the outlet of the control device.

(8) The volumetric flow rate, in standard cubic meters per minute at 20 °C, shall be determined using Method 2, 2A, 2C, or 2D of 40 CFR part 60, appendix A as appropriate.

(9) For the purpose of determining compliance with the 20 parts per million by volume limit in §63.126(b)(1), Method 18 or Method 25A of 40 CFR part 60, appendix A shall be used to measure either organic compound concentration or organic HAP concentration, except as provided in paragraph (a)(11) of this section.

(i) If Method 25A of 40 CFR part 60, appendix A is used, the following procedures shall be used to calculate the concentration of organic compounds ( $C_T$ ):

(A) The principal organic HAP in the vent stream shall be used as the calibration gas.

(B) The span value for Method 25A of 40 CFR part 60, appendix A shall be between 1.5 and 2.5 times the concentration being measured.

(C) Use of Method 25A of 40 CFR part 60, appendix A is acceptable if the response from the high-level calibration gas is at least 20 times the standard deviation of the response from the zero calibration gas when the instrument is zeroed on the most sensitive scale.

(D) The concentration of TOC shall be corrected to 3 percent oxygen using the procedures and equation in paragraph (a)(9)(v) of this section.

(ii) If Method 18 of 40 CFR part 60, appendix A is used to measure the concentration of organic compounds, the organic compound concentration ( $C_T$ ) is the sum of the individual components and shall be computed for each run using the following equation:

$$C_T = \sum_{j=1}^n C_j$$

where:

$C_T$ =Total concentration of organic compounds (minus methane and ethane), dry basis, parts per million by volume.

$C_j$ =Concentration of sample components j, dry basis, parts per million by volume.

n=Number of components in the sample.

(iii) If an owner or operator uses Method 18 of 40 CFR part 60, appendix A to compute total organic HAP concentration rather than organic compounds concentration, the equation in paragraph (a)(9)(ii) of this section shall be used except that only organic HAP species shall be summed. The list of organic HAP's is provided in table 2 of subpart F of this part.

(iv) The emission rate correction factor or excess air integrated sampling and analysis procedures of Method 3B of 40 CFR part 60, appendix A shall be used to determine the oxygen concentration. The sampling site shall be the same as that of the organic HAP or organic compound samples, and the samples shall be taken during the same time that the organic HAP or organic compound samples are taken.

(v) The organic compound concentration corrected to 3 percent oxygen ( $C_c$ ) shall be calculated using the following equation:

$$C_c = C_T \left( \frac{17.9}{20.9 - \%O_{2d}} \right)$$

where:

$C_c$ =Concentration of organic compounds corrected to 3 percent oxygen, dry basis, parts per million by volume.

$C_T$ =Total concentration of organic compounds, dry basis, parts per million by volume.

$\%O_{2d}$ =Concentration of oxygen, dry basis, percent by volume.

(10) For the purpose of determining compliance with the 98-percent reduction requirement in §63.126(b)(1) of this subpart, Method 18 or Method 25A of 40 CFR part 60, appendix A shall be used, except as provided in paragraph (a)(11) of this section.

(i) For the purpose of determining compliance with the reduction efficiency requirement, organic compound concentration may be measured in lieu of organic HAP concentration.

(ii) If Method 25A of 40 CFR part 60, appendix A is used to measure the concentration of organic compounds ( $C_T$ ), the principal organic HAP in the vent stream shall be used as the calibration gas.

(A) An emission testing interval shall consist of each 15-minute period during the performance test. For each interval, a reading from each measurement shall be recorded.

(B) The average organic compound concentration and the volume measurement shall correspond to the same emissions testing interval.

(C) The mass at the inlet and outlet of the control device during each testing interval shall be calculated as follows:

$$M_j = FKV_s C_T$$

where:

$M_j$ =Mass of organic compounds emitted during testing interval  $j$ , kilograms.

$V_s$ =Volume of air-vapor mixture exhausted at standard conditions, 20 °C and 760 millimeters mercury, standard cubic meters.

$C_T$ =Total concentration of organic compounds (as measured) at the exhaust vent, parts per million by volume, dry basis.

$K$ =Density, kilograms per standard cubic meter organic HAP. 659 kilograms per standard cubic meter organic HAP. (Note: The density term cancels out when the percent reduction is calculated. Therefore, the density used has no effect. The density of hexane is given so that it can be used to maintain the units of  $M_j$ .)

$F=10^{-6}$ =Conversion factor, (cubic meters organic HAP per cubic meters air) \* (parts per million by volume)<sup>-1</sup>.

(D) The organic compound mass emission rates at the inlet and outlet of the control device shall be calculated as follows:

$$E_i = \frac{\sum_{j=1}^n M_{ij}}{T}$$

$$E_o = \frac{\sum_{j=1}^n M_{oj}}{T}$$

where:

$E_i, E_o$ =Mass flow rate of organic compounds at the inlet (i) and outlet (o) of the combustion or recovery device, kilograms per hour.

$M_{ij}, M_{oj}$ =Mass of organic compounds at the inlet (i) or outlet (o) during testing interval  $j$ , kilograms.

$T$ =Total time of all testing intervals, hours.

$n$ =Number of testing intervals.

(iii) If Method 18 of 40 CFR part 60, appendix A is used to measure organic compounds, the mass rates of organic compounds ( $E_i, E_o$ ) shall be computed using the following equations:

$$E_i = K_2 \left( \sum_{j=1}^n C_{ij} MW_{ij} \right) Q_i$$

$$E_o = K_2 \left( \sum_{j=1}^n C_{oj} MW_{oj} \right) Q_o$$

where:

$C_{ij}, C_{oj}$ =Concentration of sample component  $j$  of the gas stream at the inlet and outlet of the control device, respectively, dry basis, parts per million by volume.

$MW_{ij}, MW_{oj}$ =Molecular weight of sample component  $j$  of the gas stream at the inlet and outlet of the control device, respectively, gram/gram-mole.

$Q_i, Q_o$ =Flow rate of gas stream at the inlet and outlet of the control device, respectively, dry standard cubic meter per minute.

$K_2$ =Constant,  $2.494 \times 10^{-6}$  (parts per million)<sup>-1</sup> (gram-mole per standard cubic meter) (kilogram/gram) (minute/hour), where standard temperature for (gram-mole per standard cubic meter) is 20 °C.

(iv) Where Method 18 or 25A of 40 CFR part 60, appendix A is used to measure the percent reduction in organic compounds, the percent reduction across the control device shall be calculated as follows:

$$R = \frac{E_i - E_o}{E_i} (100)$$

where:

R=Control efficiency of control device, percent.

$E_i$ =Mass emitted or mass flow rate of organic compounds at the inlet to the combustion or recovery device as calculated under paragraph (a)(10)(ii)(D) or (a)(10)(iii) of this section, kilogram per hour.

$E_o$ =Mass emitted or mass flow rate of organic compounds at the outlet of the combustion or recovery device, as calculated under paragraph (a)(10)(ii)(D) or (a)(10)(iii) of this section, kilogram per hour.

(11) The owner or operator may use any methods or data other than Method 18 or Method 25A of 40 CFR part 60, appendix A, if the method or data has been validated according to Method 301 of appendix A of this part.

(b) When a flare is used to comply with § 63.126(b)(2) of this subpart, the owner or operator shall comply with the flare provisions in § 63.11(b) of subpart A of this part.

(1) The compliance determination required by § 63.6(h) of subpart A of this part shall be conducted using Method 22 of 40 CFR part 60, appendix A, to determine visible emissions. The observation period shall be at least 2 hours and shall be conducted according to Method 22 of 40 CFR part 60, appendix A.

(i) If the loading cycle is less than 2 hours, then the observation period for that run shall be for the entire loading cycle.

(ii) If additional loading cycles are initiated within the 2-hour period, then visible emission observations shall be conducted for the additional cycles.

(2) An owner or operator is not required to conduct a performance test to determine the percent emission reduction or outlet total HAP or TOC concentration when a flare is used.

(c) An owner or operator is not required to conduct a performance test when any of the conditions specified in paragraph (c)(1), (c)(2), (c)(3), (c)(4), (c)(5), or (c)(6) of this section are met.

(1) When a boiler or process heater with a design heat input capacity of 44 megawatts or greater is used.

(2) When a boiler or process heater burning hazardous waste is used for which the owner or operator:

(i) Has been issued a final permit under 40 CFR part 270 and complies

with the requirements of 40 CFR part 266, subpart H, or

(ii) Has certified compliance with the interim status requirements of 40 CFR part 266 subpart H.

(3) When a boiler or process heater into which the vent stream is introduced with the primary fuel.

(4) When a vapor balancing system is used.

(5) When emissions are recycled to a chemical manufacturing process unit.

(6) When a transfer rack transfers less than 11.8 million liters per year and the owner or operator complies with the requirements in paragraph (h) of this section or uses a flare to comply with § 63.126(b)(2) of this subpart.

(d) An owner or operator using a combustion device followed by a scrubber or other control device to control a halogenated transfer vent stream in compliance with § 63.126(d) of this subpart shall conduct a performance test to determine compliance with the control efficiency or emission limits for hydrogen halides and halogens.

(1) For an owner or operator determining compliance with the percent reduction of total hydrogen halides and halogens, sampling sites shall be located at the inlet and outlet of the scrubber or other control device used to reduce halogen emissions. For an owner or operator complying with the 0.45 kilograms per hour outlet mass emission rate limit for total hydrogen halides and halogens, the sampling site shall be located at the outlet of the scrubber or other control device and prior to release to the atmosphere.

(2) Except as provided in paragraph (d)(5) of this section, Method 26 or 26A of 40 CFR part 60, appendix A, shall be used to determine the concentration in milligrams per dry standard cubic meter of the hydrogen halides and halogens that may be present in the stream. The mass emission rate of each hydrogen halide and halogen compound shall be calculated from the concentrations and the gas stream flow rate.

(3) To determine compliance with the percent emissions reduction limit, the mass emission rate for any hydrogen halides and halogens present at the scrubber inlet shall be summed together. The mass emission rate of the

compounds present at the scrubber outlet shall be summed together. Percent reduction shall be determined by comparison of the summed inlet and outlet measurements.

(4) To demonstrate compliance with the 0.45 kilograms per hour mass emission rate limit, the test results must show that the mass emission rate of the total hydrogen halides and halogens measured at the scrubber outlet is below 0.45 kilograms per hour.

(5) The owner or operator may use any other method or data to demonstrate compliance if the method or data has been validated according to the protocol of Method 301 of appendix A of this part.

(e) The owner or operator shall inspect the vapor collection system and vapor balancing system, according to the requirements for vapor collection systems in § 63.148 of this subpart.

(1) Inspections shall be performed only while a tank truck or railcar is being loaded.

(2) For vapor collection systems only, an inspection shall be performed prior to each performance test required to demonstrate compliance with § 63.126(b)(1) of this subpart.

(3) For each vapor collection system that is operated and maintained under negative pressure, the owner or operator is not required to comply with the requirements specified in § 63.148 of this subpart.

(f) For the purposes of demonstrating vapor tightness to determine compliance with § 63.126(e)(2) of this subpart, the following procedures and equipment shall be used:

(1) The pressure test procedures specified in Method 27 of 40 CFR part 60, appendix A; and

(2) A pressure measurement device which has a precision of  $\pm 2.5$  millimeters of mercury and which is capable of measuring above the pressure at which the tank truck or railcar is to be tested for vapor tightness.

(g) An owner or operator using a scrubber or other control technique to reduce the vent stream halogen atom mass emission rate to less than 0.45 kilograms per hour prior to a combustion device used to comply with § 63.126(d)(2) of this subpart shall determine the halogen atom mass emission

rate prior to the combustor according to the procedures in paragraph (d)(3) of this section.

(h) For transfer racks that transfer less than 11.8 million liters per year of liquid organic HAP's, the owner or operator may comply with the requirements in paragraphs (h)(1) through (h)(3) of this section instead of the requirements in paragraph (a) or (b) of this section.

(1) The owner or operator shall prepare, as part of the Implementation Plan required by § 63.151(c) of this subpart, a design evaluation that shall document that the control device being used achieves the required control efficiency during reasonably expected maximum loading conditions. This documentation is to include a description of the gas stream which enters the control device, including flow and organic HAP content, and the information specified in paragraphs (h)(1)(i) through (h)(1)(v) of this section, as applicable.

(i) If the control device receives vapors, gases, or liquids, other than fuels, from emission points other than transfer racks subject to this subpart, the efficiency demonstration is to include consideration of all vapors, gases, and liquids, other than fuels, received by the control device.

(ii) If an enclosed combustion device with a maximum residence time of 0.5 seconds and a minimum temperature of 760 °C is used to meet the 98-percent emission reduction requirement, documentation that those conditions exist is sufficient to meet the requirements of paragraph (h)(1) of this section.

(iii) Except as provided in paragraph (h)(1)(ii) of this section, for thermal incinerators, the design evaluation shall include the autoignition temperature of the organic HAP, the flow rate of the organic HAP emission stream, the combustion temperature, and the residence time at the combustion temperature.

(iv) For carbon adsorbers, the design evaluation shall include the affinity of the organic HAP vapors for carbon, the amount of carbon in each bed, the number of beds, the humidity of the feed gases, the temperature of the feed gases, the flow rate of the organic HAP

emission stream, the desorption schedule, the regeneration stream pressure or temperature, and the flow rate of the regeneration stream. For vacuum desorption, pressure drop shall be included.

(v) For condensers, the design evaluation shall include the final temperature of the organic HAP vapors, the type of condenser, and the design flow rate of the organic HAP emission stream.

(2) The owner or operator shall submit, as part of the Notification of Compliance Status required by § 63.152(b) of this subpart, the operating range for each monitoring parameter identified in the Implementation Plan. The specified operating range shall represent the conditions for which the control device can achieve the 98-percent-or-greater emission reduction required by § 63.126(b)(1) of this subpart.

(3) The owner or operator shall monitor the parameters specified in the Notification of Compliance Status required in § 63.152(b) of this subpart or operating permit and shall operate and maintain the control device such that the monitored parameters remain within the ranges specified in the Notification of Compliance Status.

**§ 63.129 Transfer operations provisions—reporting and recordkeeping for performance tests and notification of compliance status.**

(a) Each owner or operator of a Group 1 transfer rack shall:

(1) Keep an up-to-date, readily accessible record of the data specified in paragraphs (a)(4) through (a)(7) of this section, as applicable.

(2) Include the data specified in paragraphs (a)(4) through (a)(7) of this section in the Notification of Compliance Status report as specified in § 63.152(b) of this subpart.

(3) If any subsequent performance tests are conducted after the Notification of Compliance Status has been submitted, report the data in paragraphs (a)(4) through (a)(7) of this section in the next Periodic Report as specified in § 63.152(c) of this subpart.

(4) Record and report the following when using a control device other than a flare to achieve a 98 weight percent reduction in total organic HAP or a

total organic HAP concentration of 20 parts per million by volume, as specified in § 63.126(b)(1) of this subpart:

(i) The parameter monitoring results for thermal incinerators, catalytic incinerators, boilers or process heaters, absorbers, condensers, or carbon adsorbers specified in table 7 of this subpart, recorded during the performance test, and averaged over the time period of the performance testing.

(ii) The percent reduction of total organic HAP or TOC achieved by the control device determined as specified in § 63.128(a) of this subpart, or the concentration of total organic HAP or TOC (parts per million by volume, by compound) determined as specified in § 63.128(a) of this subpart at the outlet of the control device on a dry basis corrected to 3 percent oxygen.

(iii) The parameters shall be recorded at least every 15 minutes.

(iv) For a boiler or process heater, a description of the location at which the vent stream is introduced into the boiler or process heater.

(5) Record and report the following when using a flare to comply with § 63.126(b)(2) of this subpart:

(i) Flare design (i.e., steam-assisted, air-assisted, or non-assisted);

(ii) All visible emission readings, heat content determinations, flow rate measurements, and exit velocity determinations made during the compliance determination required by § 63.128(b) of this subpart; and

(iii) All periods during the compliance determination when the pilot flame is absent.

(6) Record and report the following when using a scrubber following a combustion device to control a halogenated vent stream, as specified in § 63.126(d) of this subpart:

(i) The percent reduction or scrubber outlet mass emission rate of total hydrogen halides and halogens determined according to the procedures in § 63.128(d) of this subpart;

(ii) The parameter monitoring results for scrubbers specified in table 7 of this subpart, and averaged over the time period of the performance test; and

(iii) The parameters shall be recorded at least every 15 minutes.

(7) Record and report the halogen concentration in the vent stream determined according to the procedures as specified in § 63.128(d) of this subpart.

(b) If an owner or operator requests approval to use a control device other than those listed in table 7 of this subpart or to monitor a parameter other than those specified in table 7 of this subpart, the owner or operator shall submit a description of planned reporting and recordkeeping procedures as required under § 63.151(f) or § 63.152(e) of this subpart. The Administrator will specify appropriate reporting and recordkeeping requirements as part of the review of the Implementation Plan or permit application.

(c) For each parameter monitored according to table 7 of this subpart or paragraph (b) of this section, the owner or operator shall establish a range for the parameter that indicates proper operation of the control device. In order to establish the range, the information required in § 63.152(b)(2) of this subpart shall be submitted in the Notification of Compliance Status or the operating permit application or amendment.

(d) Each owner or operator shall maintain a record describing in detail the vent system used to vent each affected transfer vent stream to a control device. This document shall list all valves and vent pipes that could vent the stream to the atmosphere, thereby by-passing the control device; identify which valves are secured by car-seals or lock-and-key type configurations; and indicate the position (open or closed) of those valves which have car-seals. Equipment leaks such as low leg drains, high point bleeds, analyzer vents, open-ended valves or lines, and pressure relief valves needed for safety purposes are not subject to this paragraph.

(e) An owner or operator meeting the requirements of § 63.128(h) of this subpart shall submit, as part of the Implementation Plan required by § 63.151(c) of this subpart, the information specified in § 63.128(h)(1) of this subpart.

(f) An owner or operator meeting the requirements of § 63.128(h) of this subpart shall submit, as part of the Notification of Compliance Status required by § 63.152(b) of this subpart, the oper-

ating range for each monitoring parameter identified in the Implementation Plan or in the operating permit.

**§ 63.130 Transfer operations provisions—periodic recordkeeping and reporting.**

(a) Each owner or operator using a control device to comply with § 63.126(b)(1) or (b)(2) of this subpart shall keep the following up-to-date, readily accessible records:

(1) While the transfer vent stream is being vented to the control device, continuous records of the equipment operating parameters specified to be monitored under § 63.127 of this subpart, and listed in table 7 of this subpart or specified by the Administrator in accordance with §§ 63.127(c) and 63.129(b). For flares, the hourly records and records of pilot flame outages specified in table 7 shall be maintained in place of continuous records.

(2) Records of the daily average value of each monitored parameter for each operating day, except as provided in paragraphs (a)(2)(iv) through (a)(2)(vii) of this section.

(i) The daily average shall be calculated as the average of all values for a monitored parameter recorded during the operating day, except as provided in paragraph (a)(2)(ii) of this section. The average shall cover periods of loading.

(ii) Monitoring data recorded during periods of monitoring system breakdowns, repairs, calibration checks, and zero (low-level) and high-level adjustments shall not be included in computing the hourly or daily averages. Records shall be kept of the times and durations of all such periods and any other periods of loading or control device operation.

(iii) The operating day shall be the period defined in the operating permit or the Notification of Compliance Status. It may be from midnight to midnight or another daily period.

(iv) If all recorded values for a monitored parameter during an operating day are within the range established in the Notification of Compliance Status or operating permit, the owner or operator may record that all values were

within the range rather than calculating and recording a daily average for that operating day.

(v) For flares, records of the times and duration of all periods during which the pilot flame is absent shall be kept rather than daily averages.

(vi) If carbon adsorber regeneration stream flow and carbon bed regeneration temperature are monitored, the records specified in table 7 of this subpart shall be kept instead of the daily averages.

(vii) Records of the duration of all periods when the vent stream is diverted through by-pass lines shall be kept rather than daily averages.

(3) For boilers or process heaters, records of any changes in the location at which the vent stream is introduced into the flame zone as required under the reduction of total organic HAP emissions in §63.126(b)(1) of this subpart.

(b) If a vapor collection system containing valves that could divert the emission stream away from the control device is used, each owner or operator of a Group 1 transfer rack subject to the provisions of §63.127(d) of this subpart shall keep up-to-date, readily accessible records of:

(1) Hourly records of whether the flow indicator specified under §63.127(d)(1) of this subpart was operating and whether flow was detected at any time during the hour, as well as records of the times durations of all periods when the vent stream is diverted from the control device or the monitor is not operating.

(2) Where a seal mechanism is used to comply with §63.127(d)(2), hourly records of flow are not required. In such cases, the owner or operator shall record that the monthly visual inspection of the seals or closure mechanisms has been done, and shall record the duration of all periods when the seal mechanism is broken, the by-pass line valve position has changed, or the key for a lock-and-key type lock has been checked out, and records of any car-seal that has broken, as listed in table 7 of this subpart.

(c) Each owner or operator of a Group 1 transfer rack who uses a flare to comply with §63.126(b)(2) of this subpart shall keep up-to-date, readily acces-

sible records of the flare pilot flame monitoring specified under §63.127(a)(2) of this subpart.

(d) Each owner or operator of a transfer rack subject to the requirements of §63.126 of this subpart shall submit to the Administrator Periodic Reports of the following information according to the schedule in §63.152(c) of this subpart:

(1) Reports of daily average values of monitored parameters for all operating days when the daily average values were outside the range established in the Notification of Compliance Status or operating permit.

(2) Reports of the duration of periods when monitoring data are not collected for each excursion caused by insufficient monitoring data as defined in §63.152(c)(2)(ii)(A) of this subpart.

(3) Reports of the times and durations of all periods recorded under paragraph (b)(1) of this section when the vent stream was diverted from the control device.

(4) Reports of all times recorded under paragraph (b)(2) of this section when maintenance is performed on car-sealed valves, when the car-seal is broken, when the by-pass line valve position is changed, or the key for a lock-and-key type lock has been checked out.

(5) Reports of the times and durations of all periods recorded under paragraph (a)(2)(v) of this section in which all pilot flames of a flare were absent.

(6) Reports of all carbon bed regeneration cycles during which the parameters recorded under paragraph (a)(2)(vi) of this section were outside the ranges established in the Notification of Compliance Status or operating permit.

(e) The owner or operator of a Group 1 transfer rack shall record that the verification of DOT tank certification or Method 27 testing, required in §63.126(e) of this subpart, has been performed. Various methods for the record of verification can be used, such as: A check off on a log sheet; a list of DOT serial numbers or Method 27 data; or a position description for gate security, showing that the security guard will not allow any trucks on site that do

not have the appropriate documentation.

(f) Each owner or operator of a Group 1 or Group 2 transfer rack shall record, update annually, and maintain the information specified in paragraphs (f)(1) through (f)(3) of this section in a readily accessible location on site:

(1) An analysis demonstrating the design and actual annual throughput of the transfer rack;

(2) An analysis documenting the weight-percent organic HAP's in the liquid loaded. Examples of acceptable documentation include but are not limited to analyses of the material and engineering calculations.

(3) An analysis documenting the annual rack weighted average HAP partial pressure of the transfer rack.

(i) For Group 2 transfer racks that are limited to transfer of organic HAP's with partial pressures less than 10.3 kilopascals, documentation is required of the organic HAP's (by compound) that are transferred. The rack weighted average partial pressure does not need to be calculated.

(ii) For racks transferring one or more organic HAP's with partial pressures greater than 10.3 kilopascals, as well as one or more organic HAP's with partial pressures less than 10.3 kilopascals, a rack weighted partial pressure shall be documented. The rack weighted average HAP partial pressure shall be weighted by the annual throughput of each chemical transferred.

**§ 63.131 Process wastewater provisions—flow diagrams and tables.**

(a) The flow diagrams in this subpart are provided as guidance for understanding the basic interrelationships of the wastewater provisions for process units at new and existing sources. Paragraphs (b) through (k) of this section briefly outline the flow diagrams provided.

(b) Figure 1 of this subpart provides an overview of the HON wastewater provisions.

(c) Figure 2 of this subpart outlines the process for determining whether a stream meets the definition of wastewater in § 63.101 of subpart F of this part.

(d) Figure 3 of this subpart summarizes the requirements for designating as a Group 1 wastewater stream a wastewater stream or mixture of wastewater streams.

(e) Figure 4 of this subpart summarizes the steps for making Group 1 and Group 2 determinations for wastewater streams that are generated from a process unit at a new source and contain organic HAP's listed in table 8 of this subpart.

(f) Figure 5 of this subpart summarizes the steps for making Group 1 and Group 2 determinations for wastewater streams that are generated from process units at new and existing sources and contain organic HAP's listed in table 9 of this subpart.

(g) Figure 6 of this subpart summarizes compliance options for control of wastewater streams containing organic HAP's listed in table 8 of this subpart.

(h) Figure 7 of this subpart summarizes compliance options for control of wastewater streams containing organic HAP's listed in table 9 of this subpart.

(i) Figure 8 of this subpart presents the process unit alternative compliance option for control of wastewater streams at existing sources containing organic HAP's listed in table 9 of this subpart.

(j) Figure 9 of this subpart presents the 95-percent biological treatment option for control of wastewater streams at new and existing sources containing organic HAP's listed in table 9 of this subpart.

(k) Figure 10 of this subpart outlines compliance options for control of residuals.

**§ 63.132 Process wastewater provisions—general.**

(a) For each process wastewater stream to which this subpart applies that is located at a new source, the owner or operator shall comply with the requirements in either paragraph (a)(1), (a)(2) or (a)(3) of this section no later than the dates specified in § 63.100 of subpart F of this part.

(1) The requirements of paragraphs (c), (e), and (h) of this section, or

(2) The requirements of paragraphs (d) through (i) of this section, or

(3) The requirements of paragraphs (d), (g), and (j) of this section.

(b) For each process wastewater stream to which this subpart applies that is located at an existing source, the owner or operator shall comply with the requirements in either paragraph (b)(1), (b)(2), or (b)(3) of this section no later than the dates specified in § 63.100 of subpart F of this part.

(1) The requirements of paragraphs (c) and (h) of this section, or

(2) The requirements of paragraphs (g), (h), and (i) of this section; or

(3) The requirements of paragraphs (g) and (j) of this section.

(c) For each process wastewater stream or mixture of wastewater streams to which this subpart applies that is located at a new or existing source, the owner or operator shall designate such streams as Group 1 wastewater streams according to procedures specified in § 63.144(d) of this subpart. The requirements of this paragraph are illustrated in figure 3 of this subpart.

(d) For each process wastewater stream to which this subpart applies that is located at a new source, the owner or operator shall determine the average flow rate and average VOHAP concentration of each organic HAP listed in table 8 of this subpart for the point of generation of each process wastewater stream generated by the chemical manufacturing process unit. Average flow rate shall be determined according to the procedures specified in § 63.144(c) of this subpart. Average VOHAP concentration of each organic HAP listed in table 8 of this subpart shall be determined according to the procedures specified in § 63.144(b) of this subpart. The requirements of this paragraph are illustrated in figure 4 of this subpart.

(1) A process wastewater stream shall be a Group 1 wastewater stream for organic HAP's listed in table 8 of this subpart if the average flow rate is 0.02 liter per minute or greater and the average VOHAP concentration of any individual organic HAP listed in table 8 of this subpart is 10 parts per million by weight or greater.

(2) A process wastewater stream shall be a Group 2 wastewater stream for organic HAP's listed in table 8 of this subpart if the average flow rate is less than 0.02 liter per minute or the aver-

age VOHAP concentration for each individual organic HAP listed in table 8 of this subpart is less than 10 parts per million by weight.

(e) Except as provided in paragraph (j) of this section, the owner or operator of each Group 1 stream for organic HAP's listed in table 8 of this subpart shall comply with the requirements of paragraphs (e)(1) through (e)(4) of this section and with the requirements of either paragraph (e)(5) or (e)(6) of this section.

(1) The requirements for waste management units specified in §§ 63.133 through 63.137 of this subpart.

(2) The monitoring and inspection requirements of § 63.143 of this subpart.

(3) The reporting and recordkeeping requirements of §§ 63.146 and 63.147 of this subpart.

(4) The requirements in paragraph (g) of this section to determine whether each stream is Group 1 or Group 2 for organic HAP's listed in table 9 of this subpart.

(5) The treatment requirements specified in § 63.138(b) of this subpart, or

(6) The 95-percent biological treatment option in § 63.138(e) of this subpart.

(f) The owner or operator of each Group 2 stream for organic HAP's listed in table 8 of this subpart shall comply with:

(1) The recordkeeping and reporting requirements of §§ 63.146 and 63.147 of this subpart, and

(2) The requirements in paragraph (g) of this section to determine whether each stream is Group 1 or Group 2 for organic HAP's listed in table 9 of this subpart.

(g) The owner or operator of SOCM process units at new and existing sources shall determine the average flow rate and total VOHAP average concentration for HAP's listed in table 9 of this subpart for the point of generation of each wastewater stream generated by the process unit. Average flow rate shall be determined according to the procedures specified in § 63.144(c) of this subpart. Total VOHAP average concentration shall be determined according to the procedures specified in § 63.144(b) of this subpart. The requirements of this paragraph are illustrated in figure 5 of this subpart.

(1) A process wastewater stream shall be a Group 1 wastewater stream for organic HAP's listed in table 9 of this subpart if:

(i) The total VOHAP average concentration of the wastewater stream is greater than or equal to 10,000 parts per million by weight at any flow rate, or

(ii) The total VOHAP average concentration is greater than or equal to 1,000 parts per million by weight and the average flow rate is greater than or equal to 10 liters per minute.

(2) A process wastewater stream shall be a Group 2 wastewater stream for HAP's listed in table 9 of this subpart if:

(i) The total VOHAP average concentration is less than 1,000 parts per million by weight, or

(ii) The average flow rate is less than 10 liters per minute and the total VOHAP average concentration is less than 10,000 parts per million by weight.

(h) Except as provided in paragraph (j) of this section, the owner or operator of each Group 1 stream for HAP's listed in table 9 of this subpart shall comply with the requirements of paragraphs (h)(1) through (h)(3) of this section and with the requirements of paragraph (h)(4), (h)(5), or (h)(6) of this section.

(1) The requirements for waste management units specified in §§63.133 through 63.137 of this subpart.

(2) The monitoring and inspection requirements of §63.143 of this subpart.

(3) The reporting and recordkeeping requirements of §§63.146 and 63.147 of this subpart.

(4) The treatment requirements specified in §63.138(c) of this subpart, or

(5) The process unit alternative specified in §63.138(d) of this subpart.

(6) The 95-percent biological treatment option in §63.138(e) of this subpart.

(i) The owner or operator of each Group 2 stream for HAP's listed in table 9 of this subpart shall comply with the recordkeeping and reporting requirements of §§63.146 and 63.147 of this subpart.

(j) The owner or operator may elect to transfer a Group 1 wastewater stream or residual removed from a Group 1 wastewater stream to an on-site treatment operation not owned or

operated by the owner or operator of the source generating the wastewater stream or residual, to an off-site treatment operation, or to sell it for any other purpose. The owner or operator transferring the wastewater stream or residual shall:

(1) Comply with the provisions specified in §§63.133 through 63.137 of this subpart for each waste management unit that receives or manages a Group 1 wastewater stream or residual removed from a Group 1 wastewater stream prior to and during shipment or transport.

(2) Ensure that the wastewater stream or residual is ultimately treated in accordance with the requirements of:

(i) §63.138(b) of this subpart if the stream or residual is Group 1 for table 8 compounds and with the requirements of §63.138(c) of this subpart if the stream or residual is Group 1 for table 9 compounds, or

(ii) §63.102(b) of subpart F or subpart D of this part, if alternative emission limitations have been granted in accordance with these provisions.

(3) Include with the shipment or transport of each Group 1 wastewater stream or residual removed from a Group 1 wastewater stream a notice. The notice shall state that the wastewater stream or residual contains organic HAP's which are required to be managed and treated in accordance with the provisions of this subpart. When the transport is continuous (for example, discharge to a publicly-owned treatment works), the notice shall be submitted to the treatment operator at least once per year.

**§63.133 Process wastewater provisions—wastewater tanks.**

(a) For each wastewater tank that receives, manages, or treats a Group 1 wastewater stream or a residual removed from a Group 1 wastewater stream, the owner or operator shall comply with the requirements of either paragraph (a)(1) or (a)(2) as specified in table 10 of this subpart.

(1) The owner or operator shall operate and maintain a fixed roof unless the wastewater tank is used for mixing wastewater, heating wastewater, or treating with an exothermic reaction.

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In which case, the owner or operator shall comply with the requirements specified in paragraph (a)(2) of this section.

(2) The owner or operator shall comply with the requirements in paragraphs (b) through (h) of this section and shall operate and maintain one of the emission control techniques listed in paragraphs (a)(2)(i) through (a)(2)(iv).

(i) A fixed roof and a closed-vent system that routes the organic HAP vapors vented from the wastewater tank to a control device. The fixed roof, closed-vent system, and control device shall meet the requirements specified in paragraph (b) of this section;

(ii) A fixed roof and an internal floating roof that meets the requirements specified in § 63.119(b) of this subpart;

(iii) An external floating roof that meets the requirements specified in §§ 63.119(c), 63.120(b)(5), and 63.120(b)(6) of this subpart; or

(iv) An equivalent means of emission limitation. Determination of equivalence to the reduction in emissions achieved by the requirements of paragraphs (a)(2)(i) through (a)(2)(iii) of this section will be evaluated according to § 63.102(b) of subpart F of this part. The determination will be based on the application to the Administrator which shall include the information specified in either paragraph (a)(2)(iv)(A) or (a)(2)(iv)(B) of this section.

(A) Actual emissions tests that use full-size or scale-model wastewater tanks that accurately collect and measure all organic HAP emissions from a given control technique, and that accurately simulate wind and account for other emission variables such as temperature and barometric pressure, or

(B) An engineering evaluation that the Administrator determines is an accurate method of determining equivalence.

(b) If the owner or operator elects to comply with the requirements of paragraph (a)(2)(i) of this section, the fixed roof shall meet the requirements of paragraph (b)(1) of this section, the control device shall meet the requirements of paragraph (b)(2) of this section, and the closed-vent system shall

meet the requirements of paragraph (b)(3) of this section:

(1) The fixed-roof shall meet the following requirements:

(i) Except as provided in paragraph (b)(4) of this section, the fixed roof and all openings (e.g., access hatches, sampling ports, and gauge wells) shall be maintained in accordance with the requirements specified in § 63.148 of this subpart.

(ii) Each opening shall be maintained in a closed, sealed position (e.g., covered by a lid that is gasketed and latched) at all times that the wastewater tank contains a Group 1 wastewater stream or residual removed from a Group 1 wastewater stream except when it is necessary to use the opening for wastewater sampling, removal, or for equipment inspection, maintenance, or repair.

(2) The control device shall be designed, operated, and inspected in accordance with the requirements of § 63.139 of this subpart.

(3) Except as provided in paragraph (b)(4) of this section, the closed-vent system shall be inspected in accordance with the requirements of § 63.148 of this subpart.

(4) For any fixed roof tank and closed-vent system that is operated and maintained under negative pressure, the owner or operator is not required to comply with the requirements specified in § 63.148 of this subpart.

(c) If the owner or operator elects to comply with the requirements of paragraph (a)(2)(ii) of this section, the floating roof shall be inspected according to the procedures specified in § 63.120(a)(2) and (a)(3) of this subpart.

(d) Except as provided in paragraph (e) of this section, if the owner or operator elects to comply with the requirements of (a)(2)(iii) of this section, seal gaps shall be measured according to the procedures specified in § 63.120(b)(2)(i) through (b)(4) of this subpart and the wastewater tank shall be inspected to determine compliance with § 63.120(b)(5) and (b)(6) of this subpart.

(e) If the owner or operator determines that it is unsafe to perform the seal gap measurements specified in § 63.120(b)(2)(i) through (b)(4) of this

subpart or to inspect the wastewater tank to determine compliance with § 63.120(b)(5) and (b)(6) of this subpart because the floating roof appears to be structurally unsound and poses an imminent or potential danger to inspecting personnel, the owner or operator shall comply with the requirements in either paragraph (e)(1) or (e)(2) of this section.

(1) The owner or operator shall measure the seal gaps or inspect the wastewater tank within 30 calendar days of the determination that the floating roof is unsafe, or

(2) The owner or operator shall empty and remove the wastewater tank from service within 45 calendar days of determining that the roof is unsafe. If the wastewater tank cannot be emptied within 45 calendar days, the owner or operator may utilize up to 2 extensions of up to 30 additional calendar days each. Documentation of a decision to utilize an extension shall include an explanation of why it was unsafe to perform the inspection or seal gap measurement, shall document that alternate storage capacity is unavailable, and shall specify a schedule of actions that will ensure that the wastewater tank will be emptied as soon as possible.

(f) Except as provided in paragraph (e) of this section, each wastewater tank shall be inspected initially, and semi-annually thereafter, for improper work practices in accordance with § 63.143 of this subpart. For wastewater tanks, improper work practice includes, but is not limited to, leaving open or ungasketed any access door or other opening when such door or opening is not in use.

(g) Except as provided in paragraph (e) of this section, each wastewater tank shall be inspected for control equipment failures as defined in paragraph (g)(1) of this section according to the schedule in paragraphs (g)(2) and (g)(3) of this section.

(1) Control equipment failures for wastewater tanks include, but are not limited to, the conditions specified in paragraphs (g)(1)(i) through (g)(1)(ix) of this section.

(i) The floating roof is not resting on either the surface of the liquid or on the leg supports.

(ii) There is liquid on the floating roof.

(iii) A rim seal is detached from the floating roof.

(iv) There are holes, tears, or other openings in the rim seal or seal fabric of the floating roof.

(v) There are visible gaps between the seal of an internal floating roof and the wall of the wastewater tank.

(vi) There are gaps between the metallic shoe seal or the liquid mounted primary seal of an external floating roof and the wall of the wastewater tank that exceed 212 square centimeters per meter of tank diameter or the width of any portion of any gap between the primary seal and the tank wall exceeds 3.81 centimeters.

(vii) There are gaps between the secondary seal of an external floating roof and the wall of the wastewater tank that exceed 21.2 square centimeters per meter of tank diameter or the width of any portion of any gap between the secondary seal and the tank wall exceeds 1.27 centimeters.

(viii) Where a metallic shoe seal is used on an external floating roof, one end of the metallic shoe does not extend into the stored liquid or one end of the metallic shoe does not extend a minimum vertical distance of 61 centimeters above the surface of the stored liquid.

(ix) A gasket, joint, lid, cover, or door is cracked, gapped, or broken.

(2) The owner or operator shall inspect for the control equipment failures in paragraphs (g)(1)(i) through (g)(1)(viii) according to the schedule specified in paragraphs (c) and (d) of this section.

(3) The owner or operator shall inspect for the control equipment failures in paragraph (g)(1)(ix) of this section initially, and semi-annually thereafter.

(h) Except as provided in § 63.140 of this subpart, when an improper work practice or a control equipment failure is identified, first efforts at repair shall be made no later than 5 calendar days after identification and repair shall be completed within 45 calendar days after identification. If a failure that is detected during inspections required by paragraphs (a)(2)(i) or (a)(3)(ii) of this section cannot be repaired within 45

calendar days and if the vessel cannot be emptied within 45 calendar days, the owner or operator may utilize up to 2 extensions of up to 30 additional calendar days each. Documentation of a decision to utilize an extension shall include a description of the failure, shall document that alternate storage capacity is unavailable, and shall specify a schedule of actions that will ensure that the control equipment will be repaired or the vessel will be emptied as soon as possible.

**§63.134 Process wastewater provisions—surface impoundments.**

(a) For each surface impoundment that receives, manages, or treats a Group 1 wastewater stream or a residual removed from a Group 1 wastewater stream, the owner or operator shall comply with the requirements of paragraphs (b), (c), and (d) of this section.

(b) The owner or operator shall operate and maintain on each surface impoundment a cover (e.g., air-supported structure or rigid cover) and a closed-vent system that routes the organic HAP vapors vented from the surface impoundment to a control device.

(1) The cover and all openings shall meet the following requirements:

(i) Except as provided in paragraph (b)(4) of this section, the cover and all openings (e.g., access hatches, sampling ports, and gauge wells) shall be maintained in accordance with the requirements specified in §63.148 of this subpart.

(ii) Each opening shall be maintained in a closed, sealed position (e.g., covered by a lid that is gasketed and latched) at all times that a Group 1 wastewater stream or residual removed from a Group 1 wastewater stream is in the surface impoundment except when it is necessary to use the opening for sampling, removal, or for equipment inspection, maintenance, or repair.

(iii) The cover shall be used at all times that a Group 1 wastewater stream or residual removed from a Group 1 wastewater stream is in the surface impoundment except during removal of treatment residuals in accordance with 40 CFR 268.4 or closure of the surface impoundment in accordance with 40 CFR 264.228.

(2) The control device shall be designed, operated, and inspected in accordance with §63.139 of this subpart.

(3) Except as provided in paragraph (b)(4) of this section, the closed-vent system shall be inspected in accordance with §63.148 of this subpart.

(4) For any cover and closed-vent system that is operated and maintained under negative pressure, the owner or operator is not required to comply with the requirements specified in §63.148 of this subpart.

(c) Each surface impoundment shall be inspected initially, and semi-annually thereafter, for improper work practices and control equipment failures in accordance with §63.143 of this subpart.

(1) For surface impoundments, improper work practice includes, but is not limited to, leaving open or ungasketed any access hatch or other opening when such hatch or opening is not in use.

(2) For surface impoundments, control equipment failure includes, but is not limited to, any time a seal, gasket, joint, lid, cover, or door is cracked, gapped, or broken.

(d) Except as provided in §63.140 of this subpart, when an improper work practice or a control equipment failure is identified, first efforts at repair shall be made no later than 5 calendar days after identification and repair shall be completed within 45 calendar days after identification.

**§63.135 Process wastewater provisions—containers.**

(a) For each container that receives, manages, or treats a Group 1 wastewater stream or a residual removed from a Group 1 wastewater stream, the owner or operator shall comply with the requirements of paragraphs (b) through (f) of this section.

(b) The owner or operator shall operate and maintain a cover on each container used to handle, transfer, or store a Group 1 wastewater stream or residual removed from a Group 1 wastewater stream in accordance with the following requirements:

(1) Except as provided in paragraph (d)(4) of this section, if the capacity of the container is greater than 0.42 m<sup>3</sup>, the cover and all openings (e.g., bungs,

hatches, sampling ports, and pressure relief devices) shall be maintained in accordance with the requirements specified in § 63.148 of this subpart.

(2) If the capacity of the container is less than or equal to 0.42 m<sup>3</sup>, the owner or operator shall comply with either (b)(2)(i) or (b)(2)(ii) of this section.

(i) The container must meet existing DOT specifications and testing requirements under 49 CFR part 178; or

(ii) Except as provided in paragraph (d)(4) of this section, the cover and all openings shall be maintained without leaks as specified in § 63.148 of this subpart.

(3) The cover and all openings shall be maintained in a closed, sealed position (e.g., covered by a lid that is gasketed and latched) at all times that a Group 1 wastewater stream or residual removed from a Group 1 wastewater stream is in the container except when it is necessary to use the opening for filling, removal, inspection, sampling, or pressure relief events related to safety considerations.

(c) For containers with a capacity greater than or equal to 0.42 m<sup>3</sup>, a submerged fill pipe shall be used when a container is being filled by pumping with a Group 1 wastewater stream or residual removed from a Group 1 wastewater stream.

(1) The submerged fill pipe outlet shall extend to no more than 6 inches or within two fill pipe diameters of the bottom of the container while the container is being filled.

(2) The cover shall remain in place and all openings shall be maintained in a closed, sealed position except for those openings required for the submerged fill pipe and for venting of the container to prevent physical damage or permanent deformation of the container or cover.

(d) During treatment of a Group 1 wastewater stream or residual removed from a Group 1 wastewater stream, including aeration, thermal or other treatment, in a container, whenever it is necessary for the container to be open, the container shall be located within an enclosure with a closed-vent system that routes the organic HAP vapors vented from the container to a control device.

(1) Except as provided in paragraph (d)(4) of this section, the enclosure and all openings (e.g., doors, hatches) shall be maintained in accordance with the requirements specified in § 63.148 of this subpart.

(2) The control device shall be designed, operated, and inspected in accordance with § 63.139 of this subpart.

(3) Except as provided in paragraph (d)(4) of this section, the closed-vent system shall be inspected in accordance with § 63.148 of this subpart.

(4) For any enclosure and closed-vent system that is operated and maintained under negative pressure, the owner or operator is not required to comply with the requirements specified in § 63.148 of this subpart.

(e) Each container shall be inspected initially, and semi-annually thereafter, for improper work practices and control equipment failures in accordance with § 63.143 of this subpart.

(1) For containers, improper work practice includes, but is not limited to, leaving open or ungasketed any access hatch or other opening when such hatch or opening is not in use.

(2) For containers, control equipment failure includes, but is not limited to, any time a seal, gasket, joint, lid, cover, or door is cracked, gapped, or broken.

(f) Except as provided in § 63.140 of this subpart, when an improper work practice or a control equipment failure is identified, first efforts at repair shall be made no later than 5 calendar days after identification and repair shall be completed within 15 calendar days after identification.

**§ 63.136 Process wastewater provisions—individual drain systems.**

(a) For each individual drain system that receives or manages a Group 1 wastewater stream or a residual removed from a Group 1 wastewater stream, the owner or operator shall comply with the requirements of paragraphs (b), (c), and (d) of this section. For each junction box or drain that receives or manages a Group 1 wastewater stream or residual removed from a Group 1 wastewater stream, the owner or operator shall comply with the requirements in paragraphs (b), (c),

and (d) or with paragraphs (e), (f), and (g) of this section.

(b) If the owner or operator elects to comply with this paragraph, the owner or operator shall operate and maintain on each opening in the individual drain system a cover and closed-vent system that routes the organic vapors vented from the individual drain system to a control device and the owner or operator shall comply with the requirements of paragraphs (b)(1) through (b)(5) of this section.

(1) The cover and all openings shall meet the following requirements:

(i) Except as provided in paragraph (b)(4) of this section, the cover and all openings (e.g., access hatches, sampling ports) shall be maintained in accordance with the requirements specified in § 63.148 of this subpart.

(ii) The cover and all openings shall be maintained in a closed, sealed position (e.g., covered by a lid that is gasketed and latched) at all times that a Group 1 wastewater stream or residual removed from a Group 1 wastewater stream is in the drain system except when it is necessary to use the opening for sampling or removal, or for equipment inspection, maintenance, or repair.

(2) The control device shall be designed, operated, and inspected in accordance with § 63.139 of this subpart.

(3) Except as provided in paragraph (b)(4) of this section, the closed-vent system shall be inspected in accordance with § 63.148 of this subpart.

(4) For any cover and closed-vent system that is operated and maintained under negative pressure, the owner or operator is not required to comply with the requirements specified in § 63.148 of this subpart.

(5) The individual drain system shall be designed and operated to segregate the vapors within the system from other drain systems and the atmosphere through means such as water seals.

(c) Each individual drain system shall be inspected initially, and semi-annually thereafter, for improper work practices and control equipment failures, in accordance with § 63.143 of this subpart.

(1) For individual drain systems, improper work practice includes, but is

not limited to, leaving open or ungasketed any access hatch or other opening when such hatch or opening is not in use.

(2) For individual drain systems, control equipment failure includes, but is not limited to, any time a seal, gasket, joint, lid, cover, or door is cracked, gapped, or broken.

(d) Except as provided in § 63.140 of this subpart, when an improper work practice or a control equipment failure is identified, first efforts at repair shall be made no later than 5 calendar days after identification and repair shall be completed within 15 calendar days after identification.

(e) If the owner or operator elects to comply with this paragraph, the owner or operator shall comply with the requirements in paragraphs (e)(1) through (e)(3) of this section:

(1) Each drain shall be equipped with water seal controls, such as a p-trap or s-trap, or a tightly sealed cap or plug. The owner or operator shall comply with paragraphs (e)(1)(i) and (e)(1)(ii) of this section.

(i) For each drain using a p-trap or s-trap, the owner or operator shall ensure that water is maintained in the p-trap or s-trap. For example, a flow-monitoring device indicating positive flow from a main to a branch water line supplying a trap or water being continuously dripped into the trap by a hose could be used to verify flow of water to the trap.

(ii) If a water seal is used on a drain hub receiving a Group 1 wastewater, the owner or operator shall either extend the drain pipe discharging the wastewater below the liquid surface in the water seal, or install a flexible cap (or other enclosure which restricts wind motion) that encloses the space between the drain discharging the wastewater to the drain hub receiving the wastewater.

NOTE: Water seals which are used on hubs receiving Group 2 wastewater for the purpose of eliminating cross ventilation to drains carrying Group 1 wastewater are not required to have a flexible cap or extended sub-surface drain.

(2) Each junction box shall be equipped with a cover and, if vented, shall have a vent pipe. Any vent pipe shall be at least 90 centimeters in

length and shall not exceed 10.2 centimeters in diameter.

(i) Junction box covers shall have a tight seal around the edge and shall be kept in place at all times, except during inspection and maintenance.

(ii) One of the following methods shall be used to control emissions from the junction box vent pipe to the atmosphere:

(A) Equip the junction box with a system to prevent the flow of organic HAP vapors from the vent pipe to the atmosphere during normal operation. An example of such a system includes use of water seal controls on the junction box.

(B) Connect the vent pipe to a closed-vent system that is inspected in accordance with the requirements of § 63.148 of this subpart and control device that is designed, operated, and inspected in accordance with the requirements of § 63.139 of this subpart.

(3) Each sewer line shall not be open to the atmosphere and shall be covered or enclosed in a manner so as to have no visible gaps or cracks in joints, seals, or other emission interfaces.

(f) Equipment used to comply with paragraphs (e)(1), (e)(2), or (e)(3) of this section shall be inspected as follows:

(1) Each drain using a tightly sealed cap or plug shall be visually inspected initially, and semi-annually thereafter, to ensure caps or plugs are in place and properly installed.

(2) Each junction box shall be visually inspected initially, and semi-annually thereafter, to ensure that the cover is in place and to ensure that the cover has a tight seal around the edge.

(3) The unburied portion of each sewer line shall be visually inspected initially, and semi-annually thereafter, for indication of cracks or gaps that could result in air emissions.

(g) Except as provided in § 63.140 of this subpart, when a gap, or cracked or broken seal, joint, or cover is identified, first efforts at repair shall be made no later than 5 calendar days after identification, and repair shall be completed within 15 calendar days after identification.

**§ 63.137 Process wastewater provisions—oil-water separators.**

(a) For each oil-water separator that receives, manages, or treats a Group 1 wastewater stream or a residual removed from a Group 1 wastewater stream, the owner or operator shall comply with the requirements of paragraphs (c) and (d) of this section and shall operate and maintain one of the following:

(1) A fixed roof and a closed vent system that routes the organic HAP vapors vented from the oil-water separator to a control device. The fixed roof, closed-vent system, and control device shall meet the requirements specified in paragraph (b) of this section;

(2) A floating roof meeting the requirements in 40 CFR part 60 subpart QQQ §§ 60.693–2 (a)(1)(i), (a)(1)(ii), (a)(2), (a)(3), and (a)(4). For portions of the oil-water separator where it is infeasible to construct and operate a floating roof, such as over the weir mechanism, the owner or operator shall operate and maintain a fixed roof, closed vent system, and control device that meet the requirements specified in paragraph (b) of this section.

(3) An equivalent means of emission limitation. Determination of equivalence to the reduction in emissions achieved by the requirements of paragraphs (a)(1) and (a)(2) of this section will be evaluated according to § 63.102(b) of subpart F of this part. The determination will be based on the application to the Administrator which shall include the information specified in either paragraph (a)(3)(i) or (a)(3)(ii) of this section.

(i) Actual emissions tests that use full-size or scale-model oil-water separators that accurately collect and measure all organic HAP emissions from a given control technique, and that accurately simulate wind and account for other emission variables such as temperature and barometric pressure, or

(ii) An engineering evaluation that the Administrator determines is an accurate method of determining equivalence.

(b) If the owner or operator elects to comply with the requirements of paragraphs (a)(1) or (a)(2) of this section, the fixed roof shall meet the requirements of paragraph (b)(1) of this section, the control device shall meet the requirements of paragraph (b)(2) of this section, and the closed-vent system shall meet the requirements of (b)(3) of this section.

(1) The fixed-roof shall meet the following requirements:

(i) Except as provided in (b)(4) of this section, the fixed roof and all openings (e.g., access hatches, sampling ports, and gauge wells) shall be maintained in accordance with the requirements specified in §63.148 of this subpart.

(ii) Each opening shall be maintained in a closed, sealed position (e.g., covered by a lid that is gasketed and latched) at all times that the oil-water separator contains a Group 1 wastewater stream or residual removed from a Group 1 wastewater stream except when it is necessary to use the opening for sampling or removal, or for equipment inspection, maintenance, or repair.

(2) The control device shall be designed, operated, and inspected in accordance with the requirements of §63.139 of this subpart.

(3) Except as provided in paragraph (b)(4) of this section, the closed-vent system shall be inspected in accordance with the requirements of §63.148 of this subpart.

(4) For any fixed roof and closed-vent system that is operated and maintained under negative pressure, the owner or operator is not required to comply with the requirements of §63.148 of this subpart.

(c) If the owner or operator elects to comply with the requirements of paragraph (a)(2) of this section, seal gaps shall be measured according to the procedures specified in 40 CFR part 60 subpart QQQ §60.696(d)(1) and the schedule specified in paragraphs (c)(1) and (c)(2) of this section.

(1) Measurement of primary seal gaps shall be performed within 60 calendar days after installation of the floating roof and introduction of a Group 1 wastewater stream or residual removed from a Group 1 wastewater stream and once every 5 years thereafter.

(2) Measurement of secondary seal gaps shall be performed within 60 calendar days after installation of the floating roof and introduction of a Group 1 wastewater stream or residual removed from a Group 1 wastewater stream and once every year thereafter.

(d) Each oil-water separator shall be inspected initially, and semi-annually thereafter, for improper work practices in accordance with §63.143 of this subpart. For oil-water separators, improper work practice includes, but is not limited to, leaving open or ungasketed any access door or other opening when such door or opening is not in use.

(e) Each oil-water separator shall be inspected for control equipment failures as defined in paragraph (e)(1) of this section according to the schedule specified in paragraphs (e)(2) and (e)(3) of this section.

(1) For oil-water separators, control equipment failure includes, but is not limited to, the conditions specified in paragraphs (e)(1)(i) through (e)(1)(vii) of this section.

(i) The floating roof is not resting on either the surface of the liquid or on the leg supports.

(ii) There is liquid on the floating roof.

(iii) A rim seal is detached from the floating roof.

(iv) There are holes, tears, or other openings in the rim seal or seal fabric of the floating roof.

(v) There are gaps between the primary seal and the separator wall that exceed 67 square centimeters per meter of separator wall perimeter or the width of any portion of any gap between the primary seal and the separator wall exceeds 3.8 centimeters.

(vi) There are gaps between the secondary seal and the separator wall that exceed 6.7 square centimeters per meter of separator wall perimeter or the width of any portion of any gap between the secondary seal and the separator wall exceeds 1.3 centimeters.

(vii) A gasket, joint, lid, cover, or door is cracked, gapped, or broken.

(2) The owner or operator shall inspect for the control equipment failures in paragraphs (e)(1)(i) through (e)(1)(vi) according to the schedule

specified in paragraph (c) of this section.

(3) The owner or operator shall inspect for control equipment failures in paragraph (e)(1)(vii) of this section initially, and semi-annually thereafter.

(f) Except as provided in §63.140 of this subpart, when an improper work practice or a control equipment failure is identified, first efforts at repair shall be made no later than 5 calendar days after identification and repair shall be completed within 45 calendar days after identification.

**§63.138 Process wastewater provisions—treatment processes.**

(a) Except as provided in paragraph (m) of this section, the owner or operator shall comply with the requirements of this section according to paragraph (a)(1) for new sources and paragraph (a)(2) for existing sources.

(1) The owner or operator at a new source shall comply with the requirements of paragraphs (f), (g), (h), (i), (j), (k), and (l) of this section and the requirements of either paragraphs (b) and (c), or (e) of this section.

(2) The owner or operator at an existing source shall comply with the requirements of paragraphs (f), (g), (h), (i), (j), (k), and (l) of this section and the requirements of paragraph (c), (d), or (e) of this section.

(b) Except as provided in the 95-percent biological treatment alternative in paragraph (e) of this section, the owner or operator of new sources shall comply with the following requirements for each wastewater stream that is a Group 1 wastewater stream for HAP's listed in table 8 of this subpart. The requirements of this paragraph are illustrated in figure 6 of this subpart.

(1) Except as provided in paragraph (b)(5) of this section, the Group 1 wastewater stream shall be treated by one of the following methods:

(i) Recycle to a process in accordance with the requirements specified in paragraph (f) of this section. Once a wastewater stream is returned to the production process, the wastewater stream is no longer subject to this section.

(ii) Treat using a waste management unit or treatment process which meets one of the following conditions:

(A) Reduces, by removal or destruction, the average VOHAP concentration of each individual organic HAP listed in table 8 of this subpart to less than 10 parts per million by weight as determined by the procedures specified in §63.145(b) of this subpart;

(B) Meets all design and operation specifications for a steam stripper in paragraph (g) of this section; or

(C) Reduces, by removal or destruction, by 99 percent or more, the total HAP mass flow rate of organic HAP's listed in table 8 of this subpart for a single stream, or the combined HAP mass flow rate of organic HAP's listed in table 8 of this subpart for mixed streams as determined by the procedures specified in §63.145(c) or (d) of this subpart.

(iii) Treat one Group 1 stream or a combination of one or more Group 1 or Group 2 wastewater streams using a waste management unit or treatment process which meets one of the following conditions:

(A) Reduces, by removal or destruction, by 99 percent or more the total HAP mass flow rate of organic HAP's listed in table 8 of this subpart for a single stream or the combined HAP mass flow rate of organic HAP's listed in table 8 of this subpart for mixed streams as determined by the procedures specified in §63.145(c) or (d) of this subpart, or

(B) Meets all design and operation specifications for a steam stripper in paragraph (g) of this section; or

(C) Achieves the required HAP mass removal of organic HAP's listed in table 8 of this subpart determined by the procedure in §63.145(f) of this subpart. The owner or operator shall demonstrate compliance with the required HAP mass removal by calculating the actual HAP mass removal according to the procedures in §63.145(h) of this subpart. A series of treatment processes may be used to comply with this requirement. All wastewater collection and treatment processes and waste management units located between any two treatment processes being used to achieve the required HAP mass removal shall comply with paragraph (i) of this section. For example, if a combination of two steam strippers is used

to achieve the required HAP mass removal, and a surface impoundment is located between the two steam strippers, then the surface impoundment shall comply with §63.134 of this subpart.

(2) For each treatment process or waste management unit used to comply with the requirements of this paragraph, the owner or operator shall comply with paragraph (i) of this section for control of air emissions.

(3) For each residual removed from a Group 1 wastewater stream, the owner or operator shall comply with paragraph (h) of this section for control of air emissions.

(4) The intentional or unintentional reduction in the individual VOHAP concentration or the total VOHAP average concentration of a wastewater stream by dilution of the wastewater stream with other wastewaters or materials is not allowed for the purpose of complying with the effluent VOHAP concentration requirements specified in paragraph (b)(1)(ii)(A) of this section.

(5) If process changes, not wastewater treatment, result in a Group 1 wastewater stream for organic HAP's listed in table 8 of this subpart meeting the requirements of either paragraph (b)(5)(i) or (b)(5)(ii) of this section, the owner or operator need not comply with paragraph (b)(1) of this section for that stream.

(i) If the average flow rate at the point of generation is reduced to less than 0.02 liter per minute, or

(ii) If the average VOHAP concentration at the point of generation for each organic HAP listed in table 8 of this subpart is reduced to less than 10 parts per million by weight.

(c) Except as provided in the process unit alternative in paragraph (d) of this section and the 95-percent biological treatment alternative in paragraph (e) of this section, the owner or operator of new and existing sources shall comply with the following requirements for each wastewater stream that is a Group 1 wastewater stream for organic HAP's listed in table 9 of this subpart. The requirements of this paragraph are illustrated in figure 7 of this subpart.

(1) Except as provided in paragraphs (c)(5) through (c)(7) of this section, the Group 1 wastewater stream shall be treated by one of the following methods:

(i) Recycle to a process in accordance with the requirements specified in paragraph (f) of this section. Once a wastewater stream is returned to the production process, the wastewater stream is no longer subject to this section.

(ii) Treat using a waste management unit which meets one of the following conditions:

(A) Is a steam stripper meeting all of the design and operation specifications of paragraph (g) of this section;

(B) Reduces, by removal or destruction, by 99 percent or more, the total HAP mass flow rate of the organic HAP's listed in table 9 of this subpart for a single stream or the combined HAP mass flow rate of the organic HAP's listed in table 9 for mixed streams as determined by the procedures specified in §63.145(c) or (d) of this subpart;

(C) Reduces, by removal or destruction, the total VOHAP average concentration of the organic HAP's listed in table 9 of this subpart to a level less than 50 parts per million by weight as determined by the procedures specified in §63.145(b) of this subpart; or

(D) Reduces, by removal or destruction, the HAP mass flow rate of each organic HAP listed in table 9 of this subpart by at least the reduction efficiency percentages specified in table 9 of this subpart, as determined by the procedures specified in §63.145(c) or (d) of this subpart.

(iii) Treat one Group 1 wastewater stream or a combination of Group 1 and Group 2 wastewater streams that have been aggregated or mixed for purposes of facilitating treatment using a waste management unit which meets one of the following conditions:

(A) Is a steam stripper meeting all of the design and operation specifications of paragraph (g) of this section; or

(B) Reduces, by removal or destruction, by 99 percent or more, the total HAP mass flow rate of the organic HAP's listed in table 9 of this subpart for a single stream or the combined HAP mass flow rate of the organic

HAP's listed in table 9 of this subpart for mixed streams as determined by the procedures specified in § 63.145(c) or (d) of this subpart; or

(C) Reduces, by removal or destruction, the HAP mass flow rate of each organic HAP listed in table 9 of this subpart by at least the reduction efficiency percentages specified in table 9 of this subpart or more as determined by the procedures specified in § 63.145(c) or (d) of this subpart; or

(D) Achieves the required HAP mass removal of the HAP mass flow rate of the organic HAP's listed in table 9 of this subpart determined by the procedures in § 63.145(g) of this subpart. The owner or operator shall demonstrate compliance with the required HAP mass removal by calculating the actual HAP mass removal according to the procedures in § 63.145(h) of this subpart. A series of treatment processes may be used to comply with this requirement. All wastewater collection and treatment processes and waste management units located between any two treatment processes being used to achieve the required HAP mass removal shall comply with paragraph (i) of this section. For example, if a combination of two steam strippers are used to achieve the required HAP mass removal, and a surface impoundment is located between the two steam strippers, then the surface impoundment shall comply with § 63.134 of this subpart.

(2) For each treatment process or waste management unit used to comply with the requirements of this paragraph, the owner or operator shall comply with paragraph (i) of this section for control of air emissions.

(3) For each residual removed from a Group 1 wastewater stream, the owner or operator shall comply with paragraph (h) of this section for control of air emissions.

(4) The intentional or unintentional reduction in the individual VOHAP concentration or total VOHAP average concentration of a wastewater stream by dilution of the wastewater stream with other wastewaters or materials is prohibited for the purpose of complying with the effluent VOHAP concentration requirements specified in paragraph (c)(1)(ii)(C) of this section.

(5) If the sum, for the source, of the VOHAP mass flow rates of Group 1 wastewater streams for organic HAP's listed in table 9 of this subpart (as determined at each stream's point of generation by the procedures in § 63.144(e) of this subpart) is less than 1 megagram per year, the owner or operator need not comply with paragraph (c)(1) of this section.

(6) If a Group 1 wastewater stream for organic HAP's listed in table 9 of this subpart is treated or managed in treatment processes according to the requirements in paragraphs (c)(6)(i) and (c)(6)(ii) of this section, the owner or operator need not comply with the requirements of paragraph (c)(1) of this section.

(i) The sum, for the source, of the combined VOHAP mass flow rate of the organic HAP's listed in table 9 of this subpart of each Group 1 wastewater stream as determined by the procedures specified in § 63.144(f) of this subpart and in paragraphs (c)(6)(i)(A), (c)(6)(i)(B), and (c)(6)(i)(C) of this section is reduced to less than 1 megagram per year.

(A) The combined VOHAP mass flow rate of the organic HAP's listed in table 9 of this subpart in each untreated Group 1 wastewater stream is determined for that stream's point of generation.

(B) The combined VOHAP mass flow rate of the organic HAP's listed in table 9 of this subpart in each Group 1 wastewater stream that is treated to levels less stringent than those required by paragraph (c) of this section is determined at the treatment unit outlet, but before the wastewater stream is mixed with other wastewater streams and prior to exposure to the atmosphere.

(C) The combined VOHAP mass flow rate of the organic HAP's listed in table 9 of this subpart in each Group 1 wastewater stream treated to the levels required by paragraph (c) of this section is not included in the calculation of the total source combined VOHAP mass flow rate of the organic HAP's listed in table 9 of this subpart.

(ii) Each waste management unit that receives, manages, or treats the wastewater stream prior to or during treatment meets the requirements of

§§ 63.133 through 63.137 of this subpart, as applicable.

(7) If process changes result in a Group 1 wastewater stream for organic HAP's listed in table 9 of this subpart meeting the requirements of either paragraph (c)(7)(i) or (c)(7)(ii) of this section, the owner or operator need not comply with paragraph (c)(1) of this section for that stream.

(i) The total VOHAP average concentration of organic HAP's listed in table 9 of this subpart at the point of generation is reduced to less than 1,000 parts per million by weight, or

(ii) The flow rate at the point of generation is reduced to less than 10 liters per minute and the total VOHAP average concentration of organic HAP's listed in table 9 of this subpart at the point of generation is reduced to less than 10,000 parts per million by weight.

(d) As an alternative to the treatment requirements in paragraph (c) of this section, an owner or operator may elect to treat all wastewater streams generated at an existing source by complying with the requirements of paragraphs (d)(1) through (d)(4) of this section. The requirements of this Process Unit Alternative are illustrated in figure 8 of this subpart.

(1) The owner or operator shall ensure that the total VOHAP average concentration of organic HAP's listed in table 9 of this subpart of each process wastewater stream exiting the chemical manufacturing process unit is less than 10 parts per million by weight as determined by the procedures in § 63.145(b) of this subpart.

(2) If the total VOHAP average concentration of organic HAP's listed in table 9 of this subpart for any individual wastewater stream or combination of wastewater streams, as determined either at the point of generation for an individual wastewater stream or at the point following combination with other process wastewater streams prior to exposure to the atmosphere, is greater than or equal to 10 parts per million by weight, the owner or operator shall comply with the requirements of either paragraph (d)(2)(i) or (d)(2)(ii) of this section.

(i) The wastewater stream shall be treated to achieve a total VOHAP average concentration of organic HAP's

listed in table 9 of this subpart of less than 10 parts per million by weight as determined by the procedures in § 63.145(b) of this subpart, or

(ii) The wastewater stream shall be recycled to the process in accordance with paragraphs (f)(1) and (f)(2) of this section. Once a wastewater stream is returned to the production process, the wastewater stream is no longer subject to this section.

(3) For each residual removed from a wastewater stream, the owner or operator shall comply with paragraph (h) of this section for control of air emissions.

(4) For each treatment process or waste management unit that receives, manages, or treats wastewater streams generated within the process unit, the owner or operator shall comply with paragraph (i) of this section for control of air emissions.

(e) As an alternative to the treatment requirements in paragraphs (b) and (c) of this section, an owner or operator may elect to treat all Group 1 and Group 2 wastewater streams in a biological treatment unit by complying with the requirements of paragraphs (e)(1) through (e)(4) of this section.

(1) Except as provided in paragraph (e)(4) of this section, the owner or operator shall ensure that all wastewater streams entering a biological treatment unit are treated to destroy at least 95-percent total organic HAP mass of all organic HAP's listed in table 9 of this subpart.

(2) The owner or operator shall demonstrate that 95 percent of the mass of the HAP's listed in table 9 is removed from the wastewater stream or combination of wastewater streams by the procedure specified in § 63.145(i) of this subpart.

(3) For each treatment process or waste management unit that receives, manages, or treats wastewater streams subject to this paragraph, the owner or operator shall comply with paragraph (i) of this section for control of air emissions from the point of generation to the biological treatment unit.

(4) The owner or operator may combine this compliance option with other options provided in either paragraph (b) of this section for new sources or (c)

or (d) of this section for new and existing sources. However, if a wastewater stream is in compliance with a treatment option provided in either paragraph (b), (c), or (d) of this section, and the treated wastewater is mixed with untreated wastewater that is destined for the biological treatment unit, the owner or operator shall comply with the requirements in §63.133 through §63.137 of this subpart until the wastewater enters the biological treatment unit.

(f) If an owner or operator elects to comply with the provisions in paragraph (b)(1)(i), (c)(1)(i), (d)(2)(ii), or (h)(1) of this section to recycle to a production process a Group 1 wastewater stream or residual removed from a Group 1 wastewater stream, the owner or operator shall comply with the requirements of paragraphs (f)(1) and (f)(2) of this section.

(1) The wastewater stream or residual shall not be exposed to the atmosphere during recycle or at the process unit, and

(2) Each waste management unit that receives, manages, or treats the wastewater stream or residual, prior to or during recycle, shall meet the requirements of §§63.133 through 63.137 of this subpart, as applicable.

(3) Each waste management unit that receives, manages, or treats the wastewater stream or residual, prior to or during recycle, shall meet the inspection and monitoring requirements in §63.143(a) as summarized in table 11 of this subpart, as applicable. Recycled wastewater streams and recycled residuals are not subject to the monitoring requirements for treatment processes in §63.143(b) as summarized in table 12 of this subpart.

(g) If an owner or operator elects to comply with paragraph (b)(1)(ii)(B), (b)(1)(iii)(B), (c)(1)(ii)(A), or (c)(1)(iii)(A) of this section, the owner or operator shall operate and maintain a steam stripper that meets the requirements of paragraphs (g)(1) through (g)(5) of this section.

(1) Minimum active column height of 5 meters,

(2) Countercurrent flow configuration with a minimum of 10 actual trays,

(3) Minimum steam flow rate of 0.04 kilograms of steam per liter of wastewater feed,

(4) Minimum wastewater feed temperature to the steam stripper of 95 °C,

(5) Maximum liquid loading of 67,100 liters per hour per square meter, and

(6) Minimum steam quality of 2,765 kiloJoules per kilogram.

(h) For each residual removed from a Group 1 wastewater stream, the owner or operator shall control for air emissions by complying with paragraph (i) of this section and by complying with one of the provisions in paragraphs (h)(1) through (h)(3) of this section. The requirements of this paragraph are illustrated in Figure 10 of this subpart.

(1) Recycle the residual to a production process or sell the residual for the purpose of recycling in accordance with the requirements specified in paragraph (f) of this section. Once a residual is returned to the production process, the residual is no longer subject to this section.

(2) Return the residual to the treatment process.

(3) Treat the residual to destroy the total combined HAP mass flow rate by 99 percent or more, as determined by the procedures specified in §63.145 (c) or (d) of this subpart.

(i) For each treatment process or waste management unit that receives, manages, or treats a Group 1 wastewater stream, or residual removed from a Group 1 wastewater stream, prior to and during treatment or recycle, the owner or operator shall comply with the requirements of paragraph (i)(1), (i)(2), or (i)(3) of this section.

(1) If the treatment process or waste management unit is a wastewater tank, surface impoundment, container, individual drain system, or oil-water separator, the owner or operator shall comply with the applicable provisions in §§63.133 through 63.137 of this subpart.

(2) If the treatment process or waste management unit is a properly operated biological treatment unit which meets the HAP mass removal requirements of either paragraph (b)(1)(iii)(C) or (e) of this section for new sources, or either paragraph (c)(1)(iii)(D) or (e) of

this section for new and existing sources, as applicable, the biological treatment unit need not be covered and vented to a control device as required by the applicable provisions in §§ 63.133 through 63.137 of this subpart; or

(3) If §§ 63.133 through 63.137 of this subpart are not applicable to the treatment process or waste management unit, the owner or operator shall comply with the requirements in paragraphs (i)(3)(i) through (i)(3)(iv) of this section.

(i) Each opening from the treatment process or waste management unit shall be covered and vented to a closed-vent system that routes the organic HAP vapors from the unit to a control device designed and operated in accordance with § 63.139 of this subpart;

(ii) The closed-vent system shall be inspected in accordance with § 63.148 of this subpart.

(iii) Except as provided in paragraph (i)(3)(iv) of this section, each cover shall be maintained without leaks as specified in § 63.148 of this subpart.

(iv) For any cover and closed-vent system that is operated and maintained under negative pressure, the owner or operator is not required to comply with the requirements in § 63.148 of this subpart.

(j) Except as provided in paragraph (m) of this section, the owner or operator shall demonstrate by the procedures in either paragraph (j)(1) or (j)(2) of this section that each treatment process or waste management unit used to comply with paragraph (b)(1), (c)(1), or (d) of this section achieves the conditions specified in paragraph (b)(1), (c)(1), or (d) of this section, whichever is applicable. If a biological treatment unit is used to comply with the HON, the owner or operator shall comply with paragraph (j)(3) of this section.

(1) A design evaluation and supporting documentation that addresses the operating characteristics of the treatment process or waste management unit and that is based on operation at a representative wastewater stream flow rate and a VOHAP concentration under which it would be most difficult to demonstrate compliance; or

(2) Performance tests conducted using test methods and procedures that

meet the requirements specified in § 63.145 of this subpart.

(3) The owner or operator shall use the procedures specified in appendix C of this part to demonstrate compliance.

(k) If the treatment process or waste management unit has any openings (e.g., access doors, hatches, etc.), all such openings shall be sealed (e.g., gasketed, latched, etc.) and kept closed at all times that a Group 1 wastewater stream, or residual removed from a Group 1 wastewater stream, is in the treatment process or waste management unit, except during inspection and maintenance, and except as provided in paragraph (i)(2) of this section for properly operated biological treatment units.

(1) Each seal, access door, and all other openings shall be checked by visual inspections initially, and semi-annually thereafter, to ensure that no cracks or gaps occur and that openings are closed and gasketed properly.

(2) When a gap, tear, or broken seal or gasket is identified by a visual inspection, first efforts at repair shall be no later than 5 calendar days after the leak is detected, and repair shall be completed within 15 calendar days after identification.

(l) The owner or operator of a treatment process or waste management unit that is used to comply with the provisions of this section shall monitor the unit in accordance with the applicable requirements in § 63.143 of this subpart.

(m) A wastewater stream or residual is in compliance with the requirements of paragraphs (b), (c), and (h) of this section, as applicable, and is exempt from the requirements of paragraph (j) of this section provided that the owner or operator complies with the requirements of paragraphs (f), (i), (k), and (l) of this section and documents that the wastewater stream or residual is in compliance with one of the regulatory requirements specified in paragraphs (m)(1) through (m)(3) of this section.

(1) The wastewater stream or residual is discharged to a hazardous waste incinerator for which the owner or operator has been issued a final permit under 40 CFR part 270 and complies

with the requirements of 40 CFR part 264, subpart O;

(2) The wastewater stream or residual is discharged to an industrial furnace or boiler burning hazardous waste for which the owner or operator:

(i) Has been issued a final permit under 40 CFR part 270 and complies with the requirements of 40 CFR part 266, subpart H; or

(ii) Has certified compliance with the interim status requirements of 40 CFR part 266, subpart H.

(3) The wastewater stream or residual is discharged to an underground injection well for which the owner or operator has been issued a final permit under 40 CFR part 270 or 40 CFR part 144 and complies with the requirements of 40 CFR part 122.

NOTE: The owner or operator shall comply with all applicable HON requirements prior to the point where the wastewater enters the underground portion of the injection well.

[59 FR 19468, Apr. 22, 1994, as amended at 60 FR 63627, Dec. 12, 1995]

**§ 63.139 Process wastewater provisions—control devices.**

(a) For each control device used to comply with the provisions in §§ 63.133 through 63.138 of this subpart, the owner or operator shall operate and maintain the control device in accordance with the requirements of paragraphs (b) through (f) of this section.

(b) Whenever organic HAP emissions are vented to a control device which is used to comply with the provisions of this subpart, such control device shall be operating.

(c) The control device shall be designed and operated in accordance with paragraph (c)(1), (c)(2), (c)(3), (c)(4), or (c)(5) of this section.

(1) An enclosed combustion device (including but not limited to a vapor incinerator, boiler, or process heater) shall meet the conditions in paragraph (c)(1)(i), (c)(1)(ii), or (c)(1)(iii) of this section. If a boiler or process heater is used as the control device, then the vent stream shall be introduced into the flame zone of the boiler or process heater.

(i) Reduce the total organic compound emissions, less methane and ethane, or total organic HAP emissions

vented to the control device by 95 percent by weight or greater;

(ii) Achieve an outlet total organic compound concentration, less methane and ethane, or total organic HAP concentration of 20 parts per million by volume on a dry basis corrected to 3 percent oxygen. The owner or operator shall use either Method 18 of 40 CFR part 60, appendix A, or any other method or data that has been validated according to the applicable procedures in Method 301 of appendix A of this part; or

(iii) Provide a minimum residence time of 0.5 seconds at a minimum temperature of 760 °C.

(2) A vapor recovery system (including but not limited to a carbon adsorption system or condenser) shall reduce the total organic compound emissions, less methane and ethane, or total organic HAP emissions vented to the control device of 95 percent by weight or greater.

(3) A flare shall comply with the requirements of 63.11(b) of subpart A of this part.

(4) A scrubber shall reduce the total organic compound emissions, less methane and ethane, or total organic HAP emissions in such a manner that 95 weight percent is destroyed by chemical reaction with the scrubbing liquid.

(5) Any other control device used shall reduce the total organic compound emissions, less methane and ethane, or total organic HAP emissions vented to the control device by 95 percent by weight or greater.

(d) Except as provided in paragraph (d)(4) of this section, an owner or operator shall demonstrate that each control device achieves the appropriate conditions specified in paragraph (c) of this section by using one of the methods specified in paragraphs (d)(1), (d)(2), or (d)(3) of this section.

(1) Performance tests conducted using the test methods and procedures specified in § 63.145(e) of this subpart; or

(2) A design evaluation that addresses the vent stream characteristics and control device operating parameters specified in paragraphs (d)(2)(i) through (d)(2)(vii) of this section.

(i) For a thermal vapor incinerator, the design evaluation shall consider

the vent stream composition, constituent concentrations, and flow rate and shall establish the design minimum and average temperature in the combustion zone and the combustion zone residence time.

(ii) For a catalytic vapor incinerator, the design evaluation shall consider the vent stream composition, constituent concentrations, and flow rate and shall establish the design minimum and average temperatures across the catalyst bed inlet and outlet.

(iii) For a boiler or process heater, the design evaluation shall consider the vent stream composition, constituent concentrations, and flow rate; shall establish the design minimum and average flame zone temperatures and combustion zone residence time; and shall describe the method and location where the vent stream is introduced into the flame zone.

(iv) For a condenser, the design evaluation shall consider the vent stream composition, constituent concentrations, flow rate, relative humidity, and temperature and shall establish the design outlet organic compound concentration level, design average temperature of the condenser exhaust vent stream, and the design average temperatures of the coolant fluid at the condenser inlet and outlet.

(v) For a carbon adsorption system that regenerates the carbon bed directly on-site in the control device such as a fixed-bed adsorber, the design evaluation shall consider the vent stream composition, constituent concentrations, flow rate, relative humidity, and temperature and shall establish the design exhaust vent stream organic compound concentration level, adsorption cycle time, number and capacity of carbon beds, type and working capacity of activated carbon used for carbon beds, design total regeneration stream flow over the period of each complete carbon bed regeneration cycle, design carbon bed temperature after regeneration, design carbon bed regeneration time, and design service life of carbon.

(vi) For a carbon adsorption system that does not regenerate the carbon bed directly on-site in the control device such as a carbon canister, the design evaluation shall consider the vent

stream composition, constituent concentrations, flow rate, relative humidity, and temperature and shall establish the design exhaust vent stream organic compound concentration level, capacity of carbon bed, type and working capacity of activated carbon used for carbon bed, and design carbon replacement interval based on the total carbon working capacity of the control device and source operating schedule.

(vii) For a scrubber, the design evaluation shall consider the vent stream composition; constituent concentrations; liquid-to-vapor ratio; scrubbing liquid flow rate and concentration; temperature; and the reaction kinetics of the constituents with the scrubbing liquid. The design evaluation shall establish the design exhaust vent stream organic compound concentration level and will include the additional information in paragraphs (d)(2)(vii)(A) and (d)(2)(vii)(B) of this section for trays and a packed column scrubber.

(A) Type and total number of theoretical and actual trays;

(B) Type and total surface area of packing for entire column, and for individual packed sections if column contains more than one packed section.

(3) For flares, the compliance determination specified in §63.11(b) of subpart A of this part.

(4) An owner or operator using any control device specified in paragraphs (d)(4)(i) through (d)(4)(iii) of this section is exempt from the requirements in paragraphs (d)(1) through (d)(3) of this section and from the requirements in §63.6(f) of subpart A of this part.

(i) A boiler or process heater with a design heat input capacity of 44 megawatts or greater.

(ii) A boiler or process heater into which the emission stream is introduced with the primary fuel.

(iii) A boiler or process heater burning hazardous waste for which the owner or operator:

(A) Has been issued a final permit under 40 CFR part 270 and complies with the requirements of 40 CFR part 266, subpart H, or

(B) Has certified compliance with the interim status requirements of 40 CFR part 266, subpart H.

(e) The owner or operator of a control device that is used to comply with the

provisions of this section shall monitor the control device in accordance with § 63.143 of this subpart.

(f) Except as provided in § 63.140 of this subpart, if visible defects in ductwork, piping, and connections to covers and control devices are observed during an inspection, a first effort to repair the control device shall be made as soon as practicable but no later than 5 calendar days after identification. Repair shall be completed no later than 15 calendar days after identification or the visible defect is observed.

**§ 63.140 Process wastewater provisions—delay of repair.**

Delay of repair of equipment for which an improper work practice or a control equipment failure has been identified, is allowed if the repair is technically infeasible without a shutdown, as defined in § 63.101 of subpart F of this part, or if the owner or operator determines that emissions of purged material from immediate repair would be greater than the fugitive emissions likely to result from delay of repair. Repair of this equipment shall occur by the end of the next shutdown.

**§ 63.141–63.142 [Reserved]**

**§ 63.143 Process wastewater provisions—inspections and monitoring of operations.**

(a) For each wastewater tank, surface impoundment, container, individual drain system, and oil-water separator that receives, manages, or treats a Group 1 wastewater stream, a residual removed from a Group 1 wastewater stream, a recycled Group 1 wastewater stream, or a recycled residual removed from a Group 1 wastewater stream, the owner or operator shall comply with the inspection requirements specified in table 11 of this subpart.

(b) For each design steam stripper and biological treatment unit used to comply with § 63.138 of this subpart, the owner or operator shall comply with the monitoring requirements specified in table 12 of this subpart.

(c) If the owner or operator elects to comply with Items 1 or 2 in table 12 of this subpart, the owner or operator shall request approval to monitor appropriate parameters that demonstrate

proper operation of the biological treatment unit. The request shall be submitted according to the procedures specified in § 63.146(a)(3) of this subpart.

(d) If the owner or operator elects to comply with Item 4 in table 12 of this subpart, the owner or operator shall request approval to monitor appropriate parameters that demonstrate proper operation of the selected treatment process. The request shall be submitted according to the procedures specified in § 63.146(a)(3) of this subpart, and shall include a description of planned reporting and recordkeeping procedures. The Administrator will specify appropriate reporting and recordkeeping requirements as part of the review of the Implementation Plan or permit application.

(e) Except as provided in paragraphs (e)(4) and (e)(5) of this section, for each control device used to comply with the requirements of §§ 63.133 through 63.139 of this subpart, the owner or operator shall comply with the requirements in § 63.139(d) of this subpart, and with the requirements specified in paragraph (e)(1), (e)(2), or (e)(3) of this section.

(1) The owner or operator shall comply with the monitoring requirements specified in table 13 of this subpart; or

(2) The owner or operator shall use an organic monitoring device installed at the outlet of the control device and equipped with a continuous recorder. Continuous recorder is defined in § 63.111 of this subpart; or

(3) The owner or operator shall request approval to monitor parameters other than those specified in paragraphs (e)(1) and (e)(2) of this section. The request shall be submitted according to the procedures specified in § 63.146(a)(3) of this subpart, and shall include a description of planned reporting and recordkeeping procedures. The Administrator will specify appropriate reporting and recordkeeping requirements as part of the review of the Implementation Plan or permit application.

(4) For a boiler or process heater in which all vent streams are introduced with primary fuel, the owner or operator shall comply with the requirements in § 63.139(d) of this subpart but the owner or operator is exempt from the monitoring requirements specified in

paragraphs (e)(1) through (e)(3) of this section.

(5) For a boiler or process heater with a design heat input capacity of 44 megawatts or greater, the owner or operator shall comply with the requirements in §63.139(d) of this subpart but the owner or operator is exempt from the monitoring requirements specified in paragraphs (e)(1) through (e)(3) of this section.

(f) For each parameter monitored in accordance with paragraph (c), (d), or (e) of this section, the owner or operator shall establish a range that indicates proper operation of the treatment process or control device. In order to establish the range, the owner or operator shall comply with the requirements specified in §63.146 (b)(7)(ii)(A) and (b)(8)(ii) of this subpart.

(g) Monitoring equipment shall be installed, calibrated, and maintained according to the manufacturer's specifications.

**§63.144 Process wastewater provisions—test methods and procedures for determining applicability and Group 1/Group 2 determinations.**

(a) An owner or operator of a wastewater stream shall comply with paragraph (a)(1), (a)(2), or (a)(3) of this section. These may be used in combination.

(1) An owner or operator shall determine whether a wastewater stream is a Group 1 or Group 2 wastewater stream in accordance with paragraphs (b) and (c) of this section.

(2) An owner or operator shall comply with the requirements for designating a wastewater stream to be a Group 1 wastewater stream in accordance with paragraph (d) of this section.

(3) An owner or operator shall demonstrate compliance with the source-wide 1 megagram per year option in accordance with either paragraph (e) or (f) of this section.

(b) An owner or operator of a new or existing source who elects to comply with the requirements of paragraph (a)(1) of this section shall determine the total VOHAP average concentration for HAP's listed on table 9 of this subpart; and, for new sources, the owner or operator shall determine the

average VOHAP concentration of each individually speciated organic HAP listed on table 8 of this subpart either at the point of generation of each wastewater stream as specified in paragraph (b)(1) of this section or downstream of the point(s) of generation for a single wastewater stream or a mixture of wastewater streams as specified in paragraph (b)(2) of this section.

(1) An owner or operator who elects to determine the total VOHAP average concentration for HAP's listed on table 9 of this subpart or the average VOHAP concentration of each individually speciated organic HAP listed on table 8 of this subpart at the point of generation shall comply with paragraph (b)(3), (b)(4), or (b)(5) of this section.

(2) An owner or operator who elects to determine the total VOHAP average concentration for HAP's listed on table 9 of this subpart or the average VOHAP concentration of each individually speciated organic HAP listed on table 8 of this subpart downstream of the point of generation shall comply with paragraph (b)(3), (b)(4), or (b)(5) of this section and with paragraph (b)(6) of this section. An owner or operator shall make corrections to account for changes in VOHAP concentration that result from air emissions; mixing with other water or wastewater streams; and treatment or otherwise handling the wastewater stream to remove or destroy HAP's.

(3) Knowledge of the wastewater. The owner or operator shall provide sufficient information to document the total VOHAP average concentration for HAP's listed on table 9 of this subpart or average VOHAP concentration of each individually speciated organic HAP listed on table 8 of this subpart for each wastewater stream. Examples of information that could constitute knowledge include material balances, records of chemical purchases, process stoichiometry, or previous test results provided the results are still representative of current operating practices at the process unit(s). If test data are used, then the owner or operator shall provide documentation describing the testing protocol and the means by which sampling variability and analytical variability were accounted for in the determination of the total VOHAP

average concentration of HAP's listed on table 9 of this subpart or average VOHAP concentration of each individually speciated organic HAP listed on table 8 of this subpart for the wastewater stream. The owner or operator shall document how process knowledge is used to determine the total VOHAP average concentration of HAP's listed on table 9 of this subpart or the average VOHAP concentration of each individually speciated HAP listed on table 8 of this subpart, if it is determined that the wastewater stream is not a Group 1 wastewater stream due to VOHAP concentration. If the water concentration of an individual HAP present in the wastewater is used to develop a total VOHAP average concentration or average VOHAP concentration for that individually speciated HAP, it shall be multiplied by the HAP-specific  $f_m$  factor in table 34 of this subpart to obtain the volatile portion of that HAP.

(4) Bench-scale or pilot-scale test data. The owner or operator shall provide sufficient information to demonstrate that the bench-scale or pilot-scale test concentration data are representative of the actual total VOHAP

average concentration of HAP's listed on table 9 of this subpart or average VOHAP concentration of each individually speciated organic HAP listed on table 8 of this subpart. The owner or operator shall also provide documentation describing the testing protocol, and the means by which sampling variability and analytical variability were accounted for in the determination of total VOHAP average concentration or average VOHAP concentration of each individually speciated organic HAP for the wastewater stream.

(5) Measurements made at the point of generation or at a location downstream of the point of generation. Each wastewater stream shall be analyzed using one of the following test methods for determining the total VOHAP average concentration or average VOHAP concentration of each individually speciated organic HAP.

(i) Use procedures specified in Method 305 of 40 CFR part 63, appendix A.

(A) The following equation shall be used to calculate the VOHAP concentration of an individually speciated organic HAP listed on table 8 of this subpart:

$$C_i = \left( C_C * \frac{MW}{24.055} * \frac{P_i}{760} * \frac{293}{T_i} * t * L * 10^3 \right) / M_s$$

where:

$C_i$ =VOHAP concentration of the individually-speciated organic HAP in the wastewater, parts per million by weight.

$C_C$ =Concentration of the organic HAP (i) in the gas stream, as measured by Method 305 of appendix A of this part, parts per million by volume on a dry basis.

$M_s$ =Mass of sample, from Method 305 of appendix A of this part, milligrams.

$MW$ =Molecular weight of the organic HAP (i), grams per gram-mole.

24.055=Ideal gas molar volume at 293 °Kelvin and 760 millimeters of mercury, liters per gram-mole.

$P_i$ =Barometric pressure at the time of sample analysis, millimeters mercury absolute.

760=Reference or standard pressure, millimeters mercury absolute.

293=Reference or standard temperature, °Kelvin.

$T_i$ =Sample gas temperature at the time of sample analysis, °Kelvin.

$t$ =Actual purge time, from Method 305 of appendix A of this part, minutes.

$L$ =Actual purge rate, from Method 305 of appendix A of this part, liters per minute.

$10^3$ =Conversion factor, milligrams per gram.

(B) Total VOHAP concentration (stream) can be determined by summing the VOHAP concentrations of all

individually speciated organic HAP in the wastewater.

$$C_{\text{stream}} = \sum_{i=1}^n C_i$$

Where:

$C_{\text{stream}}$  = Total VOHAP concentration of wastewater stream.

$n$  = Number of organic HAP in the wastewater stream.

$C_i$  = VOHAP concentration of individual organic HAP (i) calculated according to the procedures in paragraph (b)(5)(i)(A) of this section.

(C) The calculations in paragraph (b)(5)(i)(A), and where applicable, (b)(5)(i)(B) of this section shall be performed for a minimum of three samples from each wastewater stream which are representative of normal flow and concentration conditions. Wastewater samples shall be collected using the sampling procedures specified in Method 25D of 40 CFR part 60, appendix A. Where feasible, samples shall be taken from an enclosed pipe prior to the wastewater being exposed to the atmosphere. When sampling from an enclosed pipe is not feasible, a minimum of three representative samples shall be collected in a manner to minimize exposure of the sample to the atmosphere and loss of organic HAP's prior to sampling.

(D) If the wastewater stream has a steady flow rate throughout the year, the total VOHAP average concentration for HAP listed on table 9 of this subpart of the wastewater stream shall be calculated by averaging the values calculated in paragraph (b)(5)(i)(B) for the individual samples:

$$C_{\text{stream, avg}} = \frac{\sum_{j=1}^m C_{\text{stream, j}}}{m}$$

Where:

$C_{\text{stream, avg}}$  = Total VOHAP average concentration for HAP listed on table 9 of this subpart of the wastewater stream.

$m$  = Number of samples.

$C_{\text{stream, j}}$  = Total VOHAP concentration of wastewater stream as measured in sample j, calculated according to

the procedures in paragraph (b)(5)(i)(B) of this section.

(E) The average VOHAP concentration for each individually speciated organic HAP (i) listed on table 8 of this subpart shall be calculated by averaging the values calculated in paragraph (b)(5)(i)(A) of this section for the individual samples:

$$C_{i, \text{avg}} = \frac{\sum_{j=1}^m C_{i, j}}{m}$$

Where:

$C_{i, \text{avg}}$  = Average VOHAP concentration for each individually speciated organic HAP i listed on table 8 of this subpart.

$m$  = Number of samples.

$C_{i, j}$  = VOHAP concentration of an individual organic HAP i as measured in sample j.

(ii) Use Method 25D of part 60, appendix A to measure total VO average concentration as a surrogate for total VOHAP average concentration;

(iii) Use a test method or results from a test method that measures organic HAP concentrations in the wastewater, and that has been validated according to section 5.1 or 5.3 of Method 301 of appendix A of this part. The specific requirement of Method 305 of appendix A of this part to collect the sample into polyethylene glycol would not be applicable. The concentrations of the individual organic HAP's measured in the water may be corrected to their concentrations had they been measured by Method 305 of appendix A of this part, by multiplying each concentration by the compound-specific fraction measured factor listed in table 34 of this subpart.

(iv) If the chemical manufacturing process unit equipment has variable flow rates (e.g., flexible operation units), the owner or operator shall make corrections to account for such changes.

(6) When the total VOHAP average concentration or the average VOHAP concentration of each individual organic HAP is determined downstream of the point of generation at a location where two or more wastewater streams have been mixed, or one or more

wastewater streams have been treated or organic HAP losses to the atmosphere have occurred, the owner or operator shall make corrections for such changes in VOHAP concentration when calculating to represent the VOHAP concentration at the point of generation. Total VOHAP average concentration or average VOHAP concentration of each individual organic HAP shall be determined for each individual wastewater stream according to the procedure specified in paragraph (b)(3), (b)(4), or (b)(5) of this section.

(c) An owner or operator who elects to comply with paragraph (a)(1) of this section shall determine the annual average wastewater flow rate either at the point of generation for each wastewater stream, as specified in paragraph (c)(1) of this section, or downstream of the point(s) of generation for a single wastewater stream or a mixture of wastewater streams as specified in paragraph (c)(2) of this section.

(1) An owner or operator who elects to determine the annual average wastewater flow rate at the point of generation shall comply with paragraph (c)(3), (c)(4), or (c)(5) of this section.

(2) An owner or operator who elects to determine the annual average wastewater flow rate downstream of the point of generation shall comply with paragraph (c)(3), (c)(4), or (c)(5) of this section and with paragraph (c)(6) of this section.

(3) Use the maximum annual average production capacity of the process unit, knowledge of the process, and mass balance information to either: Estimate directly the annual average wastewater flow rate; or estimate the total annual wastewater volume and then divide total volume by 525,600 minutes in a year. If knowledge of the process is used to determine the annual average flow rate for a wastewater stream and it is determined that the wastewater stream is not Group 1, the owner or operator shall document how process knowledge is used to determine annual average flow rate.

(4) Select the highest annual average flow rate of wastewater from historical records representing the most recent 5 years of operation or, if the process

unit has been in service for less than 5 years but at least 1 year, from historical records representing the total operating life of the process unit.

(5) Measure the flow rate of the wastewater for the point of generation during conditions that are representative of average wastewater generation rates.

(6) When the average wastewater flow rate is determined downstream of the point of generation at a location where two or more wastewater streams have been mixed, or one or more wastewater streams have been treated or organic HAP losses to the atmosphere have occurred, the owner or operator shall make corrections for such changes in average wastewater flow rate when calculating to represent the average wastewater flow rate at the point of generation. The annual average flow rate shall be determined for each individual wastewater stream according to the procedures specified in paragraph (c)(1), (c)(2), or (c)(3) of this section.

(d) An owner or operator who elects to comply with paragraph (a)(2) of this section shall designate as a Group 1 wastewater stream a single wastewater stream or a mixture of wastewater streams and shall comply with the requirements in paragraphs (d)(1) through (d)(3) of this section.

(1) From the point of generation for each wastewater stream that is included in the Group 1 designation to the location where the owner or operator elects to designate such wastewater stream(s) as Group 1 wastewater, the owner or operator must comply with all applicable emission suppression requirements specified in §§63.133 through 63.137.

(2) From the location where the owner or operator designates a wastewater stream or mixture of wastewater streams to be Group 1 wastewater, such Group 1 wastewater streams shall be managed in accordance with all applicable emission suppression requirements specified in §§63.133 through 63.137 and with the treatment requirements in §63.138 of this part.

(3) An owner or operator who complies with paragraph (d) of this section is not required to determine the VOHAP concentration or flow rate for

each wastewater stream at its point of generation. However, an owner or operator who elects to designate as a Group 1 wastewater stream a single wastewater stream or a mixture of wastewater streams shall determine the following characteristics for the location where Group 1 designation is made

NOTE: Characteristics must be known to ensure compliance with treatment requirements]:

(i) The total VOHAP average concentration for HAP's listed on table 9 of this subpart or the VOHAP average concentration for each individually speciated organic HAP listed on table 8 of this subpart using the methods specified in paragraph (b)(3), (b)(4), or (b)(5)(i) through (b)(5)(iv) of this section, and

(ii) The average wastewater flow rate using methods specified in paragraph (c)(1) or (c)(2), or by measuring the flow rate of the wastewater during conditions that are representative of average wastewater generation rates.

(e) To demonstrate that the total source VOHAP mass flow rate from untreated Group 1 wastewater streams in new and existing SOCFI units is less than 1 megagram per year as specified in §63.138(c)(5) of this subpart, an owner or operator who elects to comply with paragraph (a)(3) of this section shall determine for the source the total VOHAP mass flow rate from all Group 1 wastewater streams identified in §63.132(g)(1) of this subpart at their points of generation by the following procedure:

(1) Determine the total VOHAP average concentration for each wastewater stream using the procedures specified in paragraph (b) of this section.

(2) Calculate the annual total VOHAP mass flow rate in each wastewater stream by multiplying the annual average flow rate of the wastewater stream, as determined by procedures specified in paragraph (c) of this section, times the total VOHAP average concentration, as determined by procedures specified in paragraph (b) of this section.

(3) Calculate the total source VOHAP mass flow rate from all Group 1 wastewater streams by adding together the annual total VOHAP mass flow

rate from each Group 1 wastewater stream.

(f) An owner or operator who elects to comply with paragraph (a)(3) of this section and to reduce the total source VOHAP mass flow rate to less than 1 megagram per year in accordance with §63.138(c)(6) of this subpart shall determine the total source VOHAP mass flow rate from Group 1 wastewater streams identified in §63.132(g)(1) of this subpart by the following procedures:

(1) The annual total VOHAP mass flow rate of each Group 1 wastewater stream treated to the level of the provisions of §63.138(c) of this subpart shall not be included in the total source VOHAP mass flow rate calculation.

(2) For each untreated Group 1 wastewater stream, annual total VOHAP mass flow rate shall be determined by the procedures in paragraph (e) of this section.

(3) For each Group 1 wastewater stream treated to levels less than required by the provisions of §63.138(c) of this subpart, the annual total VOHAP mass flow rate shall be determined as follows:

(i) Measurement or sampling shall occur at the point of discharge of the treatment process or series of treatment processes. The point of discharge is defined as the point where the treated wastewater exits the treatment process but before it is mixed with other wastewater streams, and prior to exposure to the atmosphere.

(ii) Determine the total VOHAP average concentration for each wastewater stream at the point of discharge using the procedures specified in paragraph (b) of this section.

(iii) Calculate the annual total VOHAP mass flow rate of each wastewater stream by multiplying the annual average flow rate of the wastewater stream times the total VOHAP average concentration.

(4) The total source VOHAP mass flow rate shall be calculated by summing the annual total VOHAP mass flow rate from all wastewater streams as determined in paragraphs (f)(2) and (f)(3) of this section.

[59 FR 19468, Apr. 22, 1994, as amended at 60 FR 63627, Dec. 12, 1995]

**§ 63.145 Process wastewater provisions—test methods and procedures to determine compliance.**

(a) This paragraph applies to the use of all performance tests to demonstrate compliance of a treatment process or waste management unit.

(1) The test shall be conducted when the treatment process or waste management unit is operating at a representative inlet wastewater stream flow rate and VOHAP concentration under which it would be most difficult to demonstrate compliance.

(2) Operations during periods of start-up, shutdown, or malfunction shall not constitute representative conditions for the purpose of a test.

(3) All testing equipment shall be prepared and installed as specified in the appropriate test methods.

(4) The owner or operator shall record all process information as is necessary to document operating conditions during the test.

(b) This paragraph applies to the use of performance tests to demonstrate compliance of a treatment process with the parts per million by weight wastewater stream concentration limits at the outlet of the treatment process.

(1) The total VOHAP average concentration shall be measured for compliance with the concentration alternatives specified in § 63.138(c)(1)(ii)(C), (d)(1), and (d)(2)(i) of this subpart; or the average concentration of each HAP shall be measured for compliance with the concentration alternatives specified in § 63.138(b)(1)(ii)(A) of this subpart.

(2) A minimum of three representative samples of the wastewater stream exiting the treatment process shall be collected and analyzed using the procedures in § 63.144(b)(5) of this subpart.

(c) This paragraph applies to the use of performance tests to demonstrate compliance of a noncombustion treatment process with the percent reduction limits. Refer to paragraph (c)(1) of this section to demonstrate compliance with the percent reduction limits for total HAP mass flow rate. Refer to paragraph (c)(2) of this section to demonstrate compliance with the percent reduction limits for each individually speciated HAP.

(1) The percent reduction of total HAP mass flow rate shall be measured for compliance with § 63.138(b)(1)(ii)(C), (b)(1)(iii)(A), (c)(1)(ii)(B), or (c)(1)(iii)(B) of this subpart by the procedures in paragraphs (c)(1)(i) through (c)(1)(iii) of this section.

(i) The same test method shall be used to analyze the wastewater samples from both the inlet and outlet of the treatment process.

(ii) The total HAP mass flow rate entering the treatment process ( $E_e$ ) and exiting the treatment process ( $E_a$ ) shall be determined by computing the product of the average flow rate of the wastewater stream entering or exiting the treatment process, and the total average HAP concentration of the entering or exiting wastewater streams, respectively.

(A) The flow rate of the entering and exiting wastewater streams shall be determined using the inlet and outlet flow meters, respectively. Where the outlet flow is not greater than the inlet flow, a flow meter shall be used at either the inlet or outlet.

(B) The total HAP average concentrations of the entering and exiting wastewater streams shall be determined according to the procedures specified in either paragraph (c)(1)(ii)(B)(1) or (c)(1)(ii)(B)(2) of this section.

(1) Calculated according to the procedures specified in paragraphs (j) and (k) of this section; or

(2) By direct measurement using the method specified in § 63.144(b)(5)(iii) of this subpart and no correction to the concentrations is required.

(C) Three grab samples of the entering wastewater stream shall be taken at equally spaced time intervals over a 1-hour period. Each 1-hour period constitutes a run, and the performance test shall consist of a minimum of 3 runs.

(D) Three grab samples of the exiting wastewater stream shall be taken at equally spaced time intervals over a 1-hour period. Each 1-hour period constitutes a run, and the performance test shall consist of a minimum of 3 runs conducted over the same 3-hour period at which the total HAP mass flow rate entering the treatment process is determined.

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(E) The total HAP mass flow rates entering and exiting the treatment process are calculated as follows:

$$E_b = \frac{K}{n \times 10^6} \left( \sum_{p=1}^n V_{bp} C_{bp} \right)$$

$$E_a = \frac{K}{n \times 10^6} \left( \sum_{p=1}^n V_{ap} C_{ap} \right)$$

where:

$E_b$ =Total HAP mass flow rate entering the treatment process, kilograms per hour.

$E_a$ =Total HAP mass flow rate exiting the treatment process, kilograms per hour.

$K$ =Density of the wastewater stream, kilograms per cubic meter.

$V_{bp}$ =Average volumetric flow rate of wastewater entering the treatment process during each run  $p$ , cubic meters per hour.

$V_{ap}$ =Average volumetric flow rate of wastewater exiting the treatment process during each run  $p$ , cubic meters per hour.

$C_{bp,avg}$ =Total HAP average concentration in the wastewater stream entering the treatment process during each run  $p$ , parts per million by weight. This shall be determined using the procedure in paragraph (k) of this section.

$C_{ap,avg}$ =Total HAP average concentration in the wastewater stream exiting the treatment process during each run  $p$ , parts per million by weight. This shall be determined using the procedure in paragraph (k) of this section.

$p$ =Run

$n$ =Number of runs.

(iii) The percent reduction across the treatment process shall be calculated as follows:

$$R = \frac{E_b - E_a}{E_b} \times 100$$

where:

$R$ =HAP control efficiency of the treatment process, percent.

$E_b$ =Total HAP mass flow rate entering the treatment process, kilograms per hour.

$E_a$ =Total HAP mass flow rate exiting the treatment process, kilograms per hour.

(2) The percent reduction of the mass flow rate of each individually speciated HAP shall be measured for compliance with §63.138(c)(1)(ii)(D) or (c)(1)(iii)(C) of this subpart by the procedures in paragraphs (c)(2)(i) through (c)(2)(iii) of this section.

(i) The same test method shall be used to analyze the wastewater samples from both the inlet and outlet of the treatment process.

(ii) The HAP mass flow rate of each individually speciated HAP compound entering the treatment process ( $E_b$ ) and exiting the treatment process ( $E_a$ ) shall be determined by computing the product of the flow rate of the wastewater stream entering or exiting the treatment process, and the average HAP concentration of each individual HAP compound of the entering or exiting wastewater streams, respectively.

(A) The flow rate of the entering and exiting wastewater streams shall be determined using the inlet and outlet flow meters, respectively.

(B) The average HAP concentration of each individual HAP of the entering and exiting wastewater streams shall be determined according to the procedures specified in either paragraph (c)(2)(ii)(B)(1) or (c)(2)(ii)(B)(2) of this section.

(1) Calculated according to the procedures specified in paragraph (j) of this section; or

(2) By direct measurement using the method specified in §63.144(b)(5)(iii) and no correction to the concentrations is required.

(C) Three grab samples of the entering wastewater stream shall be taken at equally spaced time intervals over a 1-hour period. Each 1-hour period constitutes a run, and the performance test shall consist of a minimum of 3 runs.

(D) Three grab samples of the exiting wastewater stream shall be taken at equally spaced time intervals over a 1-hour period. Each 1-hour period constitutes a run, and the performance test shall consist of a minimum of 3

runs conducted over the same 3-hour period at which the total HAP mass flow rate entering the treatment process is determined.

(E) The HAP mass flow rates of each individual HAP compound entering and exiting the treatment process are calculated as follows:

$$E_b = \frac{K}{n \times 10^6} \left( \sum_{p=1}^n V_{bp} C_{bp} \right)$$

$$E_a = \frac{K}{n \times 10^6} \left( \sum_{p=1}^n V_{ap} C_{ap} \right)$$

Where:

$E_b$  = HAP mass flow rate of an individually speciated HAP compound entering the treatment process, kilograms per hour.

$E_a$  = HAP mass flow rate of an individually speciated HAP compound exiting the treatment process, kilograms per hour.

$K$  = Density of the wastewater stream, kilograms per cubic meter.

$n$  = Number of runs.

$V_{bp}$  = Average volumetric flow rate of wastewater entering the treatment process during each run  $p$ , cubic meters per hour.

$V_{ap}$  = Average volumetric flow rate of wastewater exiting the treatment process during each run  $p$ , cubic meters per hour.

$C_{bp}$  = Average HAP concentration of an individually speciated HAP in the wastewater stream entering the treatment process during each run  $p$ , parts per million by weight.

$C_{ap}$  = Average HAP concentration of an individually speciated HAP in the wastewater stream exiting the treatment process during each run  $p$ , parts per million by weight.

(iii) The percent reduction across the treatment process for each individually speciated HAP compound shall be calculated as follows:

$$R = \frac{E_b - E_a}{E_b} \times 100$$

where:

$R$  = Control efficiency for an individually speciated HAP compound of the treatment process, percent.

$E_b$  = HAP mass flow rate of an individually speciated HAP compound entering the treatment process, kilograms per hour.

$E_a$  = HAP mass flow rate of an individually speciated HAP compound exiting the treatment process, kilograms per hour.

(d) This paragraph applies to the use of a performance test to demonstrate compliance of a combustion treatment process with the percent reduction limits for total HAP mass flow rate.

(1) The percent reduction of total HAP mass flow rate shall be measured for compliance with § 63.138(b)(1)(ii)(C), (b)(1)(iii)(A), (c)(1)(ii)(B) or (c)(1)(iii)(B) of this subpart by the procedures in paragraphs (d)(1)(i) through (d)(1)(vi) of this section.

(i) The total HAP mass flow rate entering the combustion unit ( $E_b$ ) shall be determined by computing the product of the average flow rate of the wastewater stream entering the combustion unit, as determined by the inlet flow meter, and the total HAP average concentration in the waste stream entering the combustion device, as determined according to the procedures specified in paragraph (c)(1)(ii)(B) of this section.

(ii) Each 1-hour period constitutes a run, and the performance test shall consist of a minimum of 3 runs conducted over at least a 3-hour period.

(iii) If grab sampling techniques are used, then these grab samples shall be taken at a minimum of three equally spaced time intervals during the run.

(iv) The total HAP mass flow rate entering the combustion unit ( $E_b$ ) is calculated as follows:

$$E_b = \frac{K}{n \times 10^6} \left( \sum_{p=1}^n V_p C_p \right)$$

where:

$E_b$  = Total HAP mass flow rate entering the combustion unit, kilograms per hour.

$K$  = Density of the wastewater stream, kilograms per cubic meter.

$V_p$  = Average volumetric flow rate of waste entering the combustion unit

during each run p, cubic meters per hour.

$C_p$ =Total HAP average concentration in the wastewater stream entering the combustion unit during each run p, parts per million by weight. This shall be determined using the procedure in paragraph (k) of this section.

p=Runs.

n=Number of runs.

(v) The total HAP mass flow rate exiting the combustion unit exhaust stack ( $E_a$ ) shall be determined as follows:

(A) The time period for the test shall not be less than 3 hours during which at least three 1-hour runs are conducted and be the same time period at which the total HAP mass flow rate entering the treatment process is determined. Each run shall represent a time-integrated composite sample corresponding to the periods when the waste feed is sampled.

(B) A run shall consist of a 1-hour period during the test. For each run:

(1) The volume exhausted shall be determined using Method 2, 2A, 2C, or 2D of 40 CFR part 60, appendix A, as appropriate.

(2) The total HAP average concentration in the exhaust downstream of the combustion unit shall be determined using Method 18 of 40 CFR part 60, appendix A. Alternatively, any other test method validated according to the procedures in Method 301 of appendix A of this part.

(C) The total HAP mass emitted during each run shall be calculated as follows:

$$M_p = \frac{V}{10^6} \sum_{j=1}^m 0.0416 MW_j C_j$$

where:

$M_p$ =Total HAP mass emitted during run p, kilograms.

V=Volume of air-vapor mixture exhausted at standard conditions, cubic meters.

$C_j$ =HAP concentration of compound j measured in the exhaust, parts per million by volume.

$MW_j$ =Molecular weight of compound j in exhaust stream, kilograms per kilogram-mole.

p=Run.

m=Number of organic HAP's in total.

0.0416=Conversion factor for molar volume, kilogram-mole per cubic meter at 293 °Kelvin and 760 millimeters mercury absolute.

(D) The total HAP mass emission rate in the exhaust shall be calculated as follows:

$$E_a = \left( \sum_{p=1}^n M_p \right) T$$

where:

$E_a$ =Total HAP mass flow rate emitted, kilograms per hour.

$M_p$ =Total mass of total or strippability group VOHAP emitted during run p, kilograms.

T=Total time of all runs, hours.

n=Number of runs.

(vi) The total HAP destruction efficiency for the combustion unit shall be calculated as follows:

$$R = \frac{E_b - E_a}{E_b} \times 100$$

where:

R=HAP destruction efficiency for the combustion unit, percent.

$E_b$ =Total HAP mass flow rate entering the combustion unit, kilograms per hour.

$E_a$ =Total HAP mass flow rate exiting the combustion unit, kilograms per hour.

(2) The percent reduction of the mass flow rate of each individual HAP shall be measured for compliance with §63.138(c)(1)(ii)(D) or (c)(1)(iii)(C) of this subpart by the procedures in paragraphs (d)(2)(i) through (d)(2)(vi) of this section.

(i) The mass flow rate of each individual HAP entering the combustion unit ( $E_b$ ) shall be determined by computing the product of the average flow rate of the wastewater stream entering the combustion unit, as determined by the inlet flow meter, and the average HAP concentration of each individual HAP in the waste stream entering the combustion device as determined according to the procedures specified in paragraph (c)(2)(ii)(B) of this section.

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(ii) Each 1-hour period constitutes a run, and the performance test shall consist of a minimum of 3 runs conducted over at least a 3-hour period.

(iii) If grab sampling techniques are used, then these grab samples shall be taken at a minimum of three equally spaced time intervals during the run.

(iv) The total HAP mass flow rate of each individual HAP entering the combustion unit is calculated as follows:

$$E_b = \frac{K}{n \times 10^6} \left( \sum_{p=1}^n V_p C_p \right)$$

where:

$E_b$ =HAP mass flow rate of an individually speciated HAP compound entering the combustion unit, kilograms per hour.

$K$ =Density of the waste stream, kilograms per cubic meter.

$V_p$ =Average volumetric flow rate of waste entering the combustion unit during each run  $p$ , cubic meters per hour.

$C_p$ =Average HAP concentration of an individually speciated HAP compound in the waste stream entering the combustion unit during each run  $p$ , parts per million by weight.

$p$ =Run.

$n$ =Number of runs.

(v) The mass flow rate of each individually speciated HAP exiting the combustion unit exhaust stack ( $E_a$ ) shall be determined as follows:

(A) The time period for the test shall not be less than 3 hours during which at least three 1-hour runs are conducted and be the same time period at which the mass flow rate of each individually speciated HAP entering the treatment process is determined. Each run shall represent a time-integrated composite sample corresponding to the periods when the waste feed is sampled.

(B) A run shall consist of a 1-hour period during the test. For each run:

(1) The volume exhausted shall be determined using Method 2, 2A, 2C, or 2D from appendix A of 40 CFR part 60, as appropriate.

(2) The average concentration of each individually speciated HAP in the exhaust downstream of the combustion unit shall be determined using Method

18 of appendix A of 40 CFR part 60. Alternatively, any other test method validated according to the procedures in Method 301 of appendix A of this part.

(C) The mass of each individually speciated HAP emitted during each run shall be calculated as follows:

$$M_p = \frac{V}{10^6} 0.0416 MW_j C_j$$

where:

$M_p$ =Mass of an individual HAP emitted during run  $p$ , kilograms.

$V$ =Volume of air-vapor mixture exhausted at standard conditions, cubic meters.

$C_j$ =VOHAP concentration of compound  $j$  measured in the exhaust, parts per million by volume.

$MW_j$ =Molecular weight of compound  $j$  in exhaust stream, kilograms per kilogram-mole.

0.0416=Conversion factor for molar volume, kilogram-mole per cubic meter at 293 °Kelvin and 760 millimeters mercury absolute.

(D) The mass emission rate in the exhaust of each individual HAP shall be calculated as follows:

$$E_a = \left( \sum_{p=1}^n M_p \right) T$$

where:

$E_a$ =Mass flow rate of each individual HAP, kilograms per hour.

$M_p$ =Mass of each individual HAP emitted during run  $p$ , kilograms.

$T$ =Total time of all runs, hours.

$p$ =Run.

$n$ =Number of runs.

(vi) The destruction efficiency of each individual HAP for the combustion unit shall be calculated as follows:

$$R = \frac{E_b - E_a}{E_b} \times 100$$

where:

$R$ =HAP destruction efficiency of an individual HAP for the combustion unit, percent.

$E_b$ =Mass flow rate of an individual HAP entering the combustion unit, kilograms per hour.

$E_a$ =Mass flow rate of an individual HAP exiting the combustion unit, kilograms per hour.

(e) A performance test to demonstrate compliance of a vent stream control device with the organic compound reduction efficiency requirement specified under §63.139(d)(1) of this subpart shall use the following procedures:

(1) Sampling sites shall be selected using Method 1 or 1A of 40 CFR part 60, appendix A, as appropriate.

(2) The mass flow rate of organic compounds entering and exiting the control device shall be determined as follows:

(i) The time period for the test shall not be less than 3 hours during which at least three runs are conducted.

(ii) A run shall consist of a 1-hour period during the test. For each run:

(A) The volume exhausted shall be determined using Method 2, 2A, 2C, or 2D of 40 CFR part 60, appendix A, as appropriate;

(B) The organic concentration in the vent stream entering and exiting the control device shall be determined using Method 18 of 40 CFR part 60, appendix A. Alternatively, any other test method validated according to the procedures in Method 301 of appendix A of this part may be used.

(iii) The mass flow rate of organic compounds entering and exiting the control device during each run shall be calculated as follows:

$$E_a = \frac{0.0416}{10^6 \times m} \left[ \sum_{p=1}^m V_{ap} \left( \sum_{i=1}^n C_{aip} MW_i \right) \right]$$

$$E_b = \frac{0.0416}{10^6 \times m} \left[ \sum_{p=1}^m V_{bp} \left( \sum_{i=1}^n C_{bip} MW_i \right) \right]$$

where:

$E_a$ =Mass flow rate of organic compounds exiting the control device, kilograms per hour.

$E_b$ =Mass flow rate of organic compounds entering the control device, kilograms per hour.

$V_{ap}$ =Average volumetric flow rate of vent stream exiting the control device

during run p at standards conditions, cubic meters per hour.

$V_{bp}$ =Average volumetric flow rate of vent stream entering the control device during run p at standards conditions, cubic meters per hour.

p=Run.

m=Number of runs.

$C_{aip}$ =Concentration of organic compound i measured in the vent stream exiting the control device during run p as determined by Method 18 of 40 CFR part 60, appendix A, parts per million by volume on a dry basis.

$C_{bip}$ =Concentration of organic compound i measured in the vent stream entering the control device during run p as determined by Method 18 of 40 CFR part 60, appendix A, parts per million by volume on a dry basis.

$MW_i$  = Molecular weight of organic compound i in the vent stream, kilograms per kilogram-mole.

n = Number of organic compounds in the vent stream.

0.0416 = Conversion factor for molar volume, kilograms-mole per cubic meter at 293° Kelvin and 760 millimeters mercury absolute.

(3) The organic reduction efficiency for the control device shall be calculated as follows:

$$R = \frac{E_b - E_a}{E_b} \times 100$$

where:

R = Total organic reduction efficiency for the control device, percent.

$E_b$ =Mass flow rate of organic compounds entering the control device, kilograms per hour.

$E_a$ =Mass flow rate of organic compounds exiting the control device, kilograms per hour.

(f) A performance test to demonstrate compliance with the mass removal provision for new sources in §63.138(b)(1)(iii)(C) shall consist of a determination of mass removal required to be achieved, and a determination of mass removal actually achieved. Actual mass removal and compliance shall be determined by the procedure in paragraph (h) of this section. The required mass removal for each Group 1

wastewater stream prior to combination of the streams for treatment shall be determined using the following equation:

$$RMR = \left( \frac{K}{10^6} V \sum_{j=1}^n C_{j,avg} \right) 0.99 * 60$$

Where:

RMR = Required mass removal of organic HAP listed in table 8 of this subpart in a Group 1 wastewater stream, in kilograms per hour.

K = Density of the Group 1 wastewater stream, kilograms per liter.

V = Annual average wastewater flow rate of the Group 1 wastewater stream, liters per minute.

n = Number of organic HAP listed in table 8 of this subpart in stream.

C<sub>j,avg</sub> = Average HAP concentration of each organic HAP j listed in table 8 of this subpart in the Group 1 wastewater stream at the point of generation, parts per million by weight.

0.99 = Required fraction removed of organic HAP listed in table 8 of this subpart.

(1) The annual average wastewater flow rate for each Group 1 wastewater stream to be combined for treatment (V), shall be determined using the procedures specified in §63.144(c) of this subpart.

(2) The average HAP concentration of each HAP (C<sub>j,avg</sub>) listed in table 8 of this subpart in each Group 1 wastewater stream to be combined for treatment shall be determined according to the procedures specified in either paragraph (f)(2)(i) or (f)(2)(ii) of this section.

(i) Calculated according to the procedures specified in paragraph (j) of this section; or

(ii) By direct measurement using the method specified in §63.144(b)(5)(iii) of this subpart and no correction to the concentrations is required.

(3) The total required mass removal is calculated by adding the required mass removal for each individual Group 1 stream to be combined for treatment.

(g) A performance test to demonstrate compliance with the mass removal provisions for new and existing

sources in §63.138(c)(1)(iii)(D) shall consist of a determination of mass removal required to be achieved, and a determination of mass removal actually achieved. Actual mass removal and compliance shall be determined by the procedure in paragraph (h) of this section. The required mass removal for each Group 1 wastewater stream prior to combination of the streams for treatment shall be determined using the following equation:

$$RMR = \frac{K}{10^6} V \sum_{j=1}^n (C_{j,avg} * Fr) * 60$$

Where:

RMR = Required mass removal of table 9 of this subpart organic HAP in a Group 1 wastewater stream, prior to combination with other Group 1 wastewater streams, kilograms per hour.

K = Density of the Group 1 wastewater stream, kilograms per liter.

V = Annual average wastewater flow rate of the Group 1 wastewater stream, liters per minute.

n = Number of table 9 of this subpart organic HAP compounds in stream.

C<sub>j,avg</sub> = Average HAP concentration of each organic HAP j listed in table 9 of this subpart in the Group 1 wastewater stream at the point of generation, parts per million by weight.

Fr = Required fraction removed of each compound j (target removal efficiency from table 9 of this subpart).

(1) The annual average wastewater flow rate for each Group 1 wastewater stream to be combined for treatment (V), shall be determined using the procedures specified in §63.144(c) of this subpart.

(2) The average HAP concentration of each table 9 organic HAP compound (C<sub>j,avg</sub>) in each Group 1 wastewater stream to be combined for treatment shall be determined according to the procedures specified in either paragraph (g)(2)(i) or (g)(2)(ii) of this section.

(i) Calculated according to the procedures specified in paragraph (j) of this section; or

(ii) By direct measurement using the method specified in §63.144(b)(5)(iii) of

this subpart and no correction to the concentrations is required.

(3) The total required mass removal is calculated by adding together the required mass removal for each individual Group 1 wastewater stream to be combined for treatment.

(h) For a performance test to demonstrate compliance of a treatment process with the mass removal standards, the actual total HAP mass removal of organic HAP's listed in table 9 of this subpart (for compliance with §63.138(c)(1)(iii)(D) of this subpart) or of organic HAP's listed in table 8 of this subpart [for compliance with §63.138(b)(1)(iii)(C) of this subpart] in the wastewater stream shall be determined by the following procedure:

(1) The actual mass removal of a treatment process, or series of treatment processes other than a properly operated biological treatment unit shall be determined using the following equation:

$$MR=(E_b - E_a)$$

where:

MR=Actual total HAP mass removal by the treatment process or series of treatment processes of organic HAP's listed in table 9 of this subpart or of organic HAP's listed in table 8 of this subpart, kilograms per hour.

$E_b$ =Total HAP mass flow rate of organic HAP's listed in table 9 of this subpart or of organic HAP's listed in table 8 of this subpart entering the treatment process, kilograms per hour.

$E_a$ =Total HAP mass flow rate of organic HAP's listed in table 9 of this subpart or of organic HAP's listed in table 8 of this subpart exiting the treatment process, kilograms per hour.

(2) The actual mass removal (MR) of a treatment process which is a properly operated biological treatment unit is equal to the mass removed due to biological destruction. The mass removal should be determined using the following equation:

$$MR=(E_b - E_a)*F_{bio}$$

where:

MR=Actual mass removal by the biological treatment process of total organic HAP's listed on table 8 or

table 9 of this subpart, kilograms per hour.

$E_b$ =Mass flow rate of total organic HAP's listed on table 8 or table 9 of this subpart entering the biological treatment process, kilograms per hour.

$E_a$ =Mass flow rate of total organic HAP's listed on table 8 or table 9 of this subpart exiting the biological treatment process, kilograms per hour.

$F_{bio}$ =The fraction of organic HAP's listed on table 8 of this subpart, or the total organic HAP's listed on table 9 of this subpart, biodegraded in a properly operated biological treatment unit. This fraction shall be determined using the procedures in appendix C of this part.

(i) The total HAP mass flow rate of organic HAP's listed in table 9 of this subpart or of organic HAP's listed in table 8 of this subpart entering the treatment process ( $E_b$ ) shall be determined using the procedures specified in paragraph (d)(2)(iv) of this section for combustion and paragraph (c)(1)(ii)(E) of this section for noncombustion.

(ii) The total HAP mass flow rate of organic HAP's listed in table 9 of this subpart or of organic HAP's listed in table 8 of this subpart exiting the treatment process ( $E_a$ ) shall be determined using the procedures specified in paragraph (d)(2)(v) of this section for combustion and paragraph (c)(1)(ii)(E) of this section for noncombustion.

(3) Compliance with the mass removal provisions in §63.138(b)(1)(iii)(C) or §63.138(c)(1)(iii)(D) of this subpart is achieved when the actual mass removal of the treatment process (MR) is demonstrated to meet or exceed the total required mass removal (RMR), determined using the procedures specified in paragraph (f) or (g) of this section.

(i) This paragraph applies to the use of a performance test to demonstrate compliance of a biological treatment process with the 95 percent HAP mass reduction requirement of §63.138(e) of this subpart for organic HAP's listed on table 8 or table 9 of this subpart. The percent HAP mass reduction of a biological treatment unit is equal to the mass removed due to biological destruction. The percent VOHAP mass

reduction should be determined using the following equation:

$$R = \frac{(E_b - E_a) * F_{bio}}{E_b}$$

where:

R=Control efficiency of the biological treatment process, percent.

E<sub>b</sub>=Mass flow rate of total organic HAP's entering the treatment process, kilograms per hour.

E<sub>a</sub>=Mass flow rate of total organic HAP's exiting the treatment process, kilograms per hour.

F<sub>bio</sub>=The fraction of HAP biodegraded in a properly operated biological treatment unit. This fraction shall be determined using the procedures in appendix C of this part.

(1) The total HAP mass flow rate entering the biological treatment process (E<sub>b</sub>) shall be determined using the procedures specified in paragraph (d)(2)(iv) of this section for combustion and paragraph (c)(1)(ii)(E) of this section for noncombustion.

(2) The total HAP mass flow rate exiting the biological treatment process (E<sub>a</sub>) shall be determined using the procedures specified in paragraph (d)(2)(v) of this section for combustion and paragraph (c)(1)(ii)(E) of this section for noncombustion.

(3) For new sources that start up within nine months of promulgation, an owner or operator may determine K<sub>1</sub>, which is needed when determining F<sub>bio</sub>, by using the average of results from several test methods.

(j) The owner or operator shall convert the average VOHAP concentration of each individually speciated HAP, i, to the average HAP concentration of each individually speciated HAP using the following equation:

$$C_{(b \text{ or } a),i} = \frac{C_{i,avg}}{F_{mi}}$$

where:

C<sub>(b or a),i</sub>=Average HAP concentration of each individually speciated HAP, i, in the wastewater stream entering

(b) or exiting (a) the treatment process, parts per million by weight.

C<sub>i,avg</sub>=VOHAP concentration of the individually speciated organic HAP calculated according to the procedures specified in §63.144(b)(5)(i)(E).

F<sub>mi</sub>=Fraction measured of each individually speciated organic HAP in wastewater as listed in table 34 of this subpart.

(k) The owner or operator shall calculate the total VOHAP average concentration using the following equation:

$$C_{(b \text{ or } a),avg} = \sum_{n=1}^i C_{(b \text{ or } a),i}$$

where:

C<sub>(b or a),avg</sub>=Total VOHAP average concentration in the wastewater stream entering (b) or exiting (a) the treatment process, parts per million by weight.

C<sub>(b or a),i</sub> = Average HAP concentration of each individually speciated HAP, i, in the wastewater stream entering (b) or exiting (a) the treatment process, calculated according to the procedures specified in paragraph (j) of this section, parts per million by weight.

[59 FR 19468, Apr. 22, 1994, as amended at 60 FR 63627, Dec. 12, 1995]

**§63.146 Process wastewater provisions—reporting.**

(a) The owner or operator shall submit the information specified in paragraphs (a)(1) through (a)(3) of this section as part of the Implementation Plan required by §63.151(c), (d), or (e) of this subpart.

(1) For each new source, the owner or operator shall submit the information specified in table 14a of this subpart for

organic HAP's listed on table 8 of this subpart.

(2) For each new and existing source, the owner or operator shall submit the information specified in table 14b of this subpart for organic HAP's listed on table 9 of this subpart. For each new source, the owner or operator is not required to submit information on table 14b of this subpart for any organic HAP's that have been documented in table 14a of this subpart. If applicable, the owner or operator must comply with paragraph (a)(2)(i) or (a)(2)(ii) of this section.

(i) The owner or operator who elects to comply with § 63.138(c)(5) of this subpart, must submit in table 14b of this subpart the annual total VOHAP mass flow rate of each Group 1 stream at the point of generation in megagrams per year.

(ii) If the sum, for the source, of the total VOHAP mass flow rate of those Group 1 wastewater streams not treated to levels required in § 63.138(c)(1) of this subpart has been reduced to less than 1 megagram per year, the owner or operator shall enter the following on table 14b of this subpart:

(A) The VOHAP mass flow rate at the point of generation for each untreated Group 1 wastewater stream;

(B) The VOHAP mass flow rate at the outlet of the treatment process for each Group 1 wastewater stream treated less stringently than required in § 63.138(c)(1) of this subpart;

(C) Zero for each Group 2 wastewater stream and for each Group 1 wastewater stream treated to the level required in § 63.138(b)(1) of this subpart; and

(D) The sum of the VOHAP mass flow rates in paragraphs (a)(2)(ii)(A), (a)(2)(ii)(B), and (a)(2)(ii)(C) of this section to demonstrate that annual total VOHAP mass flow rate for the source has been reduced below 1 megagram per year.

(3) For each waste management unit, treatment process, or control device used to comply with § 63.138(b)(1), (c)(1), (d), (e), or § 63.139 of this subpart for which the owner or operator seeks to monitor a parameter other than those specified in table 11, table 12, or table 13 of this subpart, the owner or operator shall submit a request for approval

to monitor alternative parameters according to the procedures specified in § 63.151(g) or § 63.152(e) of this subpart.

(b) The owner or operator shall submit the information specified in paragraphs (b)(1) through (b)(9) of this section as part of the Notification of Compliance Status required by § 63.152(b) of this subpart.

(1) For each new source, the owner or operator shall submit the information specified in table 15a of this subpart for organic HAP's listed on table 8 of this subpart.

(2) For each new and existing source, the owner or operator shall submit the information specified in table 15b of this subpart for organic HAP's listed on table 9 of this subpart. For each new source, the owner or operator is not required to submit information on table 15b of this subpart for any organic HAP's that have been documented in table 15a of this subpart.

(3) For each existing source for which the owner or operator elects to comply with the Process Unit Alternative specified in § 63.138(d) of this subpart, the owner or operator shall submit the information specified in table 16 of this subpart. If table 16 of this subpart is completed for the Notification of Compliance Status, then table 15b of this subpart need not be completed.

(4) For each treatment process identified in table 15a, 15b, or 16 of this subpart that receives, manages, or treats a Group 1 wastewater stream or residual removed from a Group 1 wastewater stream, the owner or operator shall submit the information specified in table 17 of this subpart.

(5) For each waste management unit identified in table 15a, 15b, or 16 of this subpart that receives or manages a Group 1 wastewater stream or residual removed from a Group 1 wastewater stream, the owner or operator shall submit the information specified in table 18 of this subpart.

(6) For each residual removed from a Group 1 wastewater stream, the owner or operator shall submit the information specified in table 19 of this subpart.

(7) For each control device used to comply with §§ 63.133 through 63.139 of this subpart, the owner or operator shall submit the information specified

in paragraphs (b)(7)(i) and (b)(7)(ii) of this section.

(i) For each flare, the owner or operator shall submit the information specified in paragraphs (b)(7)(i)(A) through (b)(7)(i)(C) of this section.

(A) Flare design (i.e., steam-assisted, air-assisted, or non-assisted);

(B) All visible emission readings, heat content determinations, flow rate measurements, and exit velocity determinations made during the compliance determination required by § 63.139(c)(3) of this subpart; and

(C) Reports of the times and durations of all periods during the compliance determination when the pilot flame is absent or the monitor is not operating.

(ii) For each control device other than a flare, the owner or operator shall submit the information specified in paragraph (b)(7)(ii)(A) of this section and in either paragraph (b)(7)(ii)(B) or (b)(7)(ii)(C) of this section.

(A) The information on parameter ranges specified in § 63.152(b)(2) of this subpart for the applicable parameters specified in table 13 of this subpart, unless the parameter range has already been established in the operating permit; and either

(B) The design evaluation specified in § 63.139(d)(2) of this subpart; or

(C) Results of the performance test specified in § 63.139(d)(1) of this subpart. Performance test results shall include operating ranges of key process and control parameters during the performance test; the value, averaged over the period of the performance test, of each parameter identified in the Implementation Plan or operating permit as being monitored in accordance with § 63.143 of this subpart; and applicable supporting calculations.

(8) For each treatment process used to comply with § 63.138(b)(1)(iii)(C), (c)(1)(iii)(D), (d), or (e) of this subpart, the owner or operator shall submit the information specified in paragraphs (b)(8)(i) and (b)(8)(ii) of this section.

(i) For Items 1 and 2 in table 12 of this subpart, the owner or operator shall submit the information specified in paragraphs (b)(8)(ii)(A) and (b)(8)(ii)(B) of this section.

(A) The information on parameter ranges specified in § 63.152(b)(2) of this

subpart for the parameters approved by the Administrator, unless the parameter range has already been established in the operating permit.

(B) Results of the initial measurements of the parameters approved by the Administrator and any applicable supporting calculations.

(ii) For Item 3 in table 12 of this subpart, the owner or operator shall submit the information on parameter ranges specified in § 63.152(b)(2) of this subpart for the parameters specified in Item 3 of table 12 of this subpart, unless the parameter range has already been established in the operating permit.

(9) Except as provided in paragraph (b)(9)(iii) of this section, for each waste management unit or treatment process used to comply with § 63.138(b)(1), (c)(1), (d), (e), or (h)(3) of this subpart, the owner or operator shall submit the information specified in either paragraph (b)(9)(i) or (b)(9)(ii) of this section.

(i) The design evaluation and supporting documentation specified in § 63.138(j)(1) of this subpart.

(ii) Results of the performance test specified in § 63.138(j)(2) of this subpart. Performance test results shall include operating ranges of key process and control parameters during the performance test; the value, averaged over the period of the performance test, of each parameter identified in the Implementation Plan or operating permit as being monitored in accordance with § 63.143 of this subpart; and applicable supporting calculations.

(iii) If the owner or operator elects to use one of the technologies specified in § 63.138(m) of this subpart, the owner or operator is exempt from the requirements specified in paragraphs (b)(9)(i) and (b)(9)(ii) of this section.

(c) For each waste management unit that receives, manages, or treats a Group 1 wastewater stream or residual removed from a Group 1 wastewater stream, the owner or operator shall submit as part of the next Periodic Report required by § 63.152(c) of this subpart the results of each inspection required by § 63.143(a) of this subpart in which a control equipment failure was identified. Control equipment failure is defined for each waste management unit in §§ 63.133 through 63.137 of this

subpart. Each Periodic Report shall include the date of the inspection, identification of each waste management unit in which a control equipment failure was detected, description of the failure, and description of the nature of and date the repair was made.

(d) Except as provided in paragraph (f) of this section, for each treatment process used to comply with § 63.138(b)(1), (c)(1), (d), or (e) of this subpart, the owner or operator shall submit as part of the next Periodic Report required by § 63.152(c) the information specified in paragraphs (d)(1) and (d)(2) of this section for the monitoring required by § 63.143(b) of this subpart.

(1) For Items 1 and 2 in table 12, the owner or operator shall submit the information specified in either paragraph (d)(1)(i) or (d)(1)(ii) of this section.

(i) For each parameter approved by the Administrator and required by the Administrator to be monitored continuously, the owner or operator shall submit the monitoring results for each operating day during which the daily average value of the monitored parameter is outside the range established in the Notification of Compliance Status or operating permit.

(ii) For each parameter approved by the Administrator for which monitoring is not required by the Administrator to be continuous, the owner or operator shall submit the results of measurements that indicate that the biological treatment unit failed to meet the requirements specified in the applicable paragraphs cited in column 1 of table 12 of this subpart.

(2) For Item 3 in table 12 of this subpart, the owner or operator shall submit the monitoring results for each operating day during which the daily average value of any monitored parameter specified in Item 3 of table 12 of this subpart was outside the range established in the Notification of Compliance Status or operating permit.

(e) Except as provided in paragraph (f) of this section, for each control device used to comply with §§ 63.133 through 63.139 of this subpart, the owner or operator shall submit as part of the next Periodic Report required by § 63.152(c) of this subpart the information specified in either paragraph (e)(1) or (e)(2) of this section.

(1) The information specified in table 20 of this subpart, or

(2) If the owner or operator elects to comply with § 63.143(e)(2) of this subpart, i.e., an organic monitoring device installed at the outlet of the control device, the owner or operator shall submit the monitoring results for each operating day during which the daily average concentration level or reading is outside the range established in the Notification of Compliance Status or operating permit.

(f) Where the owner or operator obtains approval to use a treatment process or control device other than one for which monitoring requirements are specified in § 63.143 of this subpart, or to monitor parameters other than those specified in table 12 or 13 of this subpart, the Administrator will specify appropriate reporting requirements.

(g) If the owner or operator requests an extension for emptying a wastewater tank in accordance with § 63.133(e)(2) of this subpart, the request shall include the information specified in § 63.133(e)(2) of this subpart.

**§ 63.147 Process wastewater provisions—recordkeeping.**

(a) The owner or operator shall keep a record of all reports submitted in accordance with § 63.146 of this subpart, including the Implementation Plan, Notification of Compliance Status, and Periodic Reports.

(b) The owner or operator transferring a Group 1 wastewater stream or residual removed from a Group 1 wastewater stream in accordance with § 63.132(j) shall keep a record of the notice sent to the treatment operator stating that the wastewater stream or residual contains organic HAP that are required to be managed and treated in accordance with the provisions of this subpart.

(c) The owner or operator shall keep in a readily accessible location the records specified in paragraphs (c)(1) through (c)(6) of this section.

(1) A record that each waste management unit inspection required by §§ 63.133 through 63.137 of this subpart was performed.

(2) A record that each inspection for control devices required by § 63.139 of this subpart was performed.

(3) A record of the results of each seal gap measurement required by §§ 63.133(d) and 63.137(c) of this subpart. The records shall include the date of the measurement, the raw data obtained in the measurement, and the calculations described in § 63.120(b) (2), (3), and (4) of this subpart.

(4) For Item 1 and Item 2 of table 12 of this subpart, the owner or operator shall keep the records approved by the Administrator.

(5) Except as provided in paragraphs (e) and (g) of this section, continuous records of the monitored parameters specified in Item 3 of table 12 and table 13 of this subpart, and in § 63.143(e)(2) of this subpart.

(6) Documentation of a decision to use an extension, as specified in § 63.133(e)(2) or (h) of this subpart, which shall include a description of the failure, documentation that alternate storage capacity is unavailable, and specification of a schedule of actions that will ensure that the control equipment will be repaired or the vessel will be emptied as soon as possible.

(d) For each boiler or process heater used to comply with §§ 63.133 through 63.139 of this subpart, the owner or operator shall keep a record of any changes in the location at which the vent stream is introduced into the flame zone as required in § 63.139(c)(1) of this subpart.

(e) The owner or operator shall keep records of the daily average value of each continuously monitored parameter for each operating day, except as provided in paragraphs (e)(3) and (e)(4) of this section.

(1) The daily average shall be calculated as the average of all values for a monitored parameter recorded during the operating day, except as provided in paragraph (e)(2) of this section. The average shall cover a 24-hour period if operation is continuous, or the number of hours of operation per operating day if operation is not continuous.

(2) Monitoring data recorded during periods of monitoring system breakdowns, repairs, calibration checks, and zero (low-level) and high-level adjustments shall not be included in computing the hourly or daily averages. Records shall be kept of the times and durations of all such periods and any

other periods of process or control device operation when monitors are not operating.

(3) The operating day shall be the period defined in the operating permit or the Notification of Compliance Status. It may be from midnight to midnight or another daily period.

(4) If all recorded values for a monitored parameter during an operating day are within the range established in the Notification of Compliance Status or operating permit, the owner or operator may record that all values were within the range rather than calculating and recording a daily average for that operating day.

(5) For flares, records of the times and duration of all periods during which the pilot flame is absent shall be kept rather than daily averages.

(6) For carbon adsorbers, the owner or operator shall keep the records specified in paragraphs (e)(6)(i) and (e)(6)(ii) of this section instead of daily averages.

(i) Records of the total regeneration stream mass flow for each carbon bed regeneration cycle.

(ii) Records of the temperature of the carbon bed after each regeneration cycle.

(f) Where the owner or operator obtains approval to use a control device other than one for which monitoring requirements are specified in § 63.143 of this subpart, or to monitor parameters other than those specified in table 12 or table 13 of this subpart, the Administrator will specify appropriate record-keeping requirements.

(g) If the owner or operator uses process knowledge to determine the VOHAP concentration of a wastewater stream as specified in § 63.144(b)(1) of this subpart and/or uses process knowledge to determine the annual average flow rate as specified in § 63.144(e)(1) of this subpart, and determines that the wastewater stream is not a Group 1 wastewater stream, the owner or operator shall keep in a readily accessible location the documentation of how process knowledge was used to determine the VOHAP concentration and/or the annual average flow rate of the wastewater stream.

[59 FR 19468, Apr. 22, 1994, as amended at 60 FR 63628, Dec. 12, 1995]

**§ 63.148 Leak inspection provisions.**

(a) Except as provided in paragraph (k) of this section, for each vapor collection system, closed-vent system, fixed roof, cover, or enclosure required to comply with this section, the owner or operator shall comply with the requirements of paragraphs (b) through (j) of this section.

(b) Except as provided in paragraphs (g) and (h) of this section, each vapor collection system and closed-vent system shall be inspected according to the procedures and schedule specified in paragraphs (b)(1) and (b)(2) of this section and each fixed roof, cover, and enclosure shall be inspected according to the procedures and schedule specified in paragraph (b)(3) of this section.

(1) If the vapor collection system or closed vent system is constructed of hard-piping, the owner or operator shall:

(i) Conduct an initial inspection according to the procedures in paragraph (c) of this section, and

(ii) Conduct annual visual inspections for visible, audible, or olfactory indications of leaks.

(2) If the vapor collection system or closed vent system is constructed of ductwork, the owner or operator shall:

(i) Conduct an initial inspection according to the procedures in paragraph (c) of this section, and

(ii) Conduct annual inspections according to the procedures in paragraph (c) of this section.

(iii) Conduct annual visual inspections for visible, audible, or olfactory indications of leaks.

(3) For each fixed roof, cover, and enclosure, the owner or operator shall:

(i) Conduct an initial inspection according to the procedures in paragraph (c) of this section, and

(ii) Conduct semi-annual visual inspections for visible, audible, or olfactory indications of leaks as specified in § 63.133 through § 63.137 of this subpart.

(c) Each vapor collection system, closed vent system, fixed roof, cover, and enclosure shall be inspected according to the procedures specified in paragraphs (c)(1) through (c)(5) of this section.

(1) Inspections shall be conducted in accordance with Method 21 of 40 CFR part 60, appendix A.

(2) The detection instrument shall meet the performance criteria of Method 21 of 40 CFR part 60, appendix A, except the instrument response factor criteria in section 3.1.2(a) of Method 21 shall be for the average composition of the process fluid not each individual VOC in the stream.

(3) The detection instrument shall be calibrated before use on each day of its use by the procedures specified in Method 21 of 40 CFR part 60, appendix A.

(4) Calibration gases shall be as follows:

(i) Zero air (less than 10 parts per million hydrocarbon in air); and

(ii) A mixture of methane in air at a concentration less than 10,000 parts per million.

(5) The background level shall be determined according to the procedures in Method 21 of 40 CFR part 60 appendix A.

(6) The arithmetic difference between the maximum concentration indicated by the instrument and the background level shall be compared with 500 parts per million for determining compliance.

(d) Leaks, as indicated by an instrument reading greater than 500 parts per million above background or by visual inspections, shall be repaired as soon as practicable, except as provided in paragraph (e) of this section.

(1) A first attempt at repair shall be made no later than 5 calendar days after the leak is detected.

(2) Repair shall be completed no later than 15 calendar days after the leak is detected, except as provided in paragraph (d)(3) of this section.

(3) For leaks found in vapor collection systems used for transfer operations, repairs shall be completed no later than 15 calendar days after the leak is detected or at the beginning of the next transfer loading operation, whichever is later.

(e) Delay of repair of a vapor collection system, closed vent system, fixed roof, cover, or enclosure for which leaks have been detected is allowed if the repair is technically infeasible without a shutdown, as defined in § 63.101 of subpart F of this part, or if the owner or operator determines that

emissions resulting from immediate repair would be greater than the fugitive emissions likely to result from delay of repair. Repair of such equipment shall be complete by the end of the next shutdown.

(f) For each vapor collection system or closed vent system that contains bypass lines that could divert a vent stream away from the control device and to the atmosphere, the owner or operator shall comply with the provisions of either paragraph (f)(1) or (f)(2) of this section, except as provided in paragraph (f)(3) of this section.

(1) Install, calibrate, maintain, and operate a flow indicator that determines whether vent stream flow is present at least once every 15 minutes. Records shall be generated as specified in § 63.118(a)(3) of this subpart. The flow indicator shall be installed at the entrance to any bypass line; or

(2) Secure the bypass line valve in the closed position with a car-seal or a lock-and-key type configuration. A visual inspection of the seal or closure mechanism shall be performed at least once every month to ensure the valve is maintained in the closed position and the vent stream is not diverted through the bypass line.

(3) Equipment such as low leg drains, high point bleeds, analyzer vents, open-ended valves or lines, and pressure relief valves needed for safety purposes are not subject to this paragraph.

(g) Any parts of the vapor collection system, closed vent system, fixed roof, cover, or enclosure that are designated, as described in paragraph (i)(1) of this section, as unsafe to inspect are exempt from the inspection requirements of paragraphs (b)(1), (b)(2), and (b)(3)(i) of this section if:

(1) The owner or operator determines that the equipment is unsafe to inspect because inspecting personnel would be exposed to an imminent or potential danger as a consequence of complying with paragraphs (b)(1), (b)(2), or (b)(3)(i) of this section; and

(2) The owner or operator has a written plan that requires inspection of the equipment as frequently as practicable during safe-to-inspect times.

(h) Any parts of the vapor collection system, closed vent system, fixed roof, cover, or enclosure that are designated,

as described in paragraph (i)(2) of this section, as difficult to inspect are exempt from the inspection requirements of paragraphs (b)(1), (b)(2), and (b)(3)(i) of this section if:

(1) The owner or operator determines that the equipment cannot be inspected without elevating the inspecting personnel more than 2 meters above a support surface; and

(2) The owner or operator has a written plan that requires inspection of the equipment at least once every 5 years.

(i) The owner or operator shall record the information specified in paragraphs (i)(1) through (i)(5) of this section.

(1) Identification of all parts of the vapor collection system, closed vent system, fixed roof, cover, or enclosure that are designated as unsafe to inspect, an explanation of why the equipment is unsafe to inspect, and the plan for inspecting the equipment.

(2) Identification of all parts of the vapor collection system, closed vent system, fixed roof, cover, or enclosure that are designated as difficult to inspect, an explanation of why the equipment is difficult to inspect, and the plan for inspecting the equipment.

(3) For each vapor collection system or closed vent system that contains bypass lines that could divert a vent stream away from the control device and to the atmosphere, the owner or operator shall keep a record of the information specified in either paragraph (i)(3)(i) or (i)(3)(ii) of this section.

(i) Hourly records of whether the flow indicator specified under paragraph (f)(1) of this section was operating and whether flow was detected at any time during the hour, as well as records of the times and durations of all periods when the vent stream is diverted from the control device or the monitor is not operating.

(ii) Where a seal mechanism is used to comply with paragraph (f)(2) of this section, hourly records of flow are not required. In such cases, the owner or operator shall record that the monthly visual inspection of the seals or closure mechanisms has been done, and shall record the duration of all periods when the seal mechanism is broken, the bypass line valve position has changed, or the key for a lock-and-key type lock

has been checked out, and records of any car-seal that has broken.

(4) For each inspection during which a leak is detected, a record of the information specified in paragraphs (i)(4)(i) through (i)(4)(viii) of this section.

(i) The instrument identification numbers; operator name or initials; and identification of the equipment.

(ii) The date the leak was detected and the date of the first attempt to repair the leak.

(iii) Maximum instrument reading measured by the method specified in paragraph (d) of this section after the leak is successfully repaired or determined to be nonrepairable.

(iv) "Repair delayed" and the reason for the delay if a leak is not repaired within 15 calendar days after discovery of the leak.

(v) The name, initials, or other form of identification of the owner or operator (or designee) whose decision it was that repair could not be effected without a shutdown.

(vi) The expected date of successful repair of the leak if a leak is not repaired within 15 calendar days.

(vii) Dates of shutdowns that occur while the equipment is unrepaired.

(viii) The date of successful repair of the leak.

(5) For each inspection conducted in accordance with paragraph (c) of this section during which no leaks are detected, a record that the inspection was performed, the date of the inspection, and a statement that no leaks were detected.

(6) For each visual inspection conducted in accordance with paragraph (b)(1)(ii) or (b)(3)(ii) of this section during which no leaks are detected, a record that the inspection was performed, the date of the inspection, and a statement that no leaks were detected.

(j) The owner or operator shall submit with the reports required by § 63.182(b) of subpart H of this part or with the reports required by § 63.152(c) of this subpart, the information specified in paragraphs (j)(1) through (j)(3) of this section.

(1) The information specified in paragraph (i)(4) of this section;

(2) Reports of the times and durations of all periods recorded under

paragraph (i)(3)(i) of this section when the vent stream is diverted from the control device through a bypass line; and

(3) Reports of all periods recorded under paragraph (i)(3)(ii) of this section in which the seal mechanism is broken, the bypass line valve position has changed, or the key to unlock the bypass line valve was checked out.

(k) If a closed-vent system subject to this section is also subject to § 63.172 of subpart H of this part, the owner or operator shall comply with the provisions of § 63.172 of subpart H of this part and is exempt from the requirements of this section.

[59 FR 19468, Apr. 22, 1994, as amended at 60 FR 63628, Dec. 12, 1995]

#### § 63.149 [Reserved]

#### § 63.150 Emissions averaging provisions.

(a) This section applies to owners or operators of existing sources who seek to comply with the emission standard in § 63.112(a) of this subpart by using emissions averaging according to § 63.112(f) of this subpart rather than following the provisions of §§ 63.113 through 63.148 of this subpart.

(b) Unless an operating permit application has been submitted, the owner or operator shall develop and submit for approval an Implementation Plan containing all of the information required in § 63.151(d) of this subpart for all points to be included in an emissions average. The Implementation Plan or operating permit application shall identify all emission points to be included in the emissions average. This must include any Group 1 emission points to which the reference control technology (defined in § 63.111 of this subpart) is not applied and all other emission points being controlled as part of the average.

(c) The following emission points can be used to generate emissions averaging credits, if control was applied after November 15, 1990 and if sufficient information is available to determine the appropriate value of credits for the emission point:

(1) Group 2 emission points.

(2) Group 1 emission points that are controlled by a technology that the

Administrator or permitting authority agrees has a higher nominal efficiency than the reference control technology. Information on the nominal efficiencies for such technologies must be submitted and approved as provided in paragraph (i) of this section.

(3) Emission points from which emissions are reduced by pollution prevention measures. Percent reductions for pollution prevention measures shall be determined as specified in paragraph (j) of this section.

(i) For a Group 1 emission point, the pollution prevention measure must reduce emissions more than the reference control technology would have had the reference control technology been applied to the emission point instead of the pollution prevention measure except as provided in paragraph (c)(3)(ii) of this section.

(ii) If a pollution prevention measure is used in conjunction with other controls for a Group 1 emission point, the pollution prevention measure alone does not have to reduce emissions more than the reference control technology, but the combination of the pollution prevention measure and other controls must reduce emissions more than the reference control technology would have had it been applied instead.

(d) The following emission points cannot be used to generate emissions averaging credits:

(1) Emission points already controlled on or before November 15, 1990, unless the level of control is increased after November 15, 1990, in which case credit will be allowed only for the increase in control after November 15, 1990.

(2) Group 1 emission points that are controlled by a reference control technology, unless the reference control technology has been approved for use in a different manner and a higher nominal efficiency has been assigned according to the procedures in paragraph (i) of this section. For example, it is not allowable to claim that an internal floating roof meeting the specifications of §63.119(b) of this subpart applied to a storage vessel is achieving greater than 95 percent control.

(3) Emission points on shut-down process units. Process units that are

shut down cannot be used to generate credits or debits.

(4) Wastewater that is not process wastewater or wastewater streams treated in biological treatment units. These two types of wastewater cannot be used to generate credits or debits. For the purposes of this section, the terms wastewater and wastewater stream are used to mean process wastewater.

(5) Emission points controlled to comply with a State or Federal rule other than this subpart, unless the level of control has been increased after November 15, 1990 above what is required by the other State or Federal rule. Only the control above what is required by the other State or Federal rule will be credited. However, if an emission point has been used to generate emissions averaging credit in an approved emissions average, and the point is subsequently made subject to a State or Federal rule other than this subpart, the point can continue to generate emissions averaging credit for the purpose of complying with the previously approved average.

(e) For all points included in an emissions average, the owner or operator shall:

(1) Calculate and record monthly debits for all Group 1 emission points that are controlled to a level less stringent than the reference control technology for those emission points. Equations in paragraph (g) of this section shall be used to calculate debits.

(2) Calculate and record monthly credits for all Group 1 or Group 2 emission points that are overcontrolled to compensate for the debits. Equations in paragraph (h) of this section shall be used to calculate credits. Emission points and controls that meet the criteria of paragraph (c) of this section may be included in the credit calculation, whereas those described in paragraph (d) of this section shall not be included.

(3) Demonstrate that annual credits calculated according to paragraph (h) of this section are greater than or equal to debits calculated for the same annual compliance period according to paragraph (g) of this section.

(i) The owner or operator may choose to include more than the required number of credit-generating emission points in an average in order to increase the likelihood of being in compliance.

(ii) The initial demonstration in the Implementation Plan or operating permit application that credit-generating emission points will be capable of generating sufficient credits to offset the debits from the debit-generating emission points must be made under representative operating conditions. After the compliance date, actual operating data will be used for all debit and credit calculations.

(4) Demonstrate that debits calculated for a quarterly (3-month) period according to paragraph (g) of this section are not more than 1.30 times the credits for the same period calculated according to paragraph (h) of this section. Compliance for the quarter shall be determined based on the ratio of credits and debits from that quarter, with 30 percent more debits than credits allowed on a quarterly basis.

(5) Record and report quarterly and annual credits and debits in the Periodic Reports as specified in §63.152(c) of this subpart. Every fourth Periodic Report shall include a certification of compliance with the emissions averaging provisions as required by §63.152(c)(5)(iv)(B) of this subpart.

(f) Debits and credits shall be calculated in accordance with the methods and procedures specified in paragraphs (g) and (h) of this section, respectively, and shall not include emissions from the following:

(1) More than 20 individual Group 1 or Group 2 emission points. Where pollu-

tion prevention measures (as specified in paragraph (j)(1) of this section) are used to control emission points to be included in an emissions average, no more than 25 emission points may be included in the average. For example, if two emission points to be included in an emissions average are controlled by pollution prevention measures, the average may include up to 22 emission points.

(2) Periods of start-up, shutdown, and malfunction as described in the source's start-up, shutdown, and malfunction plan required by §63.6(e)(3) of subpart A of this part.

(3) Periods of monitoring excursions as defined in §63.152(c)(2)(ii)(A) of this subpart. For these periods, the calculation of monthly credits and debits shall be adjusted as specified in paragraphs (f)(3)(i) through (f)(3)(iii) of this section.

(i) No credits would be assigned to the credit-generating emission point.

(ii) Maximum debits would be assigned to the debit-generating emission point.

(iii) The owner or operator may demonstrate to the Administrator that full or partial credits or debits should be assigned using the procedures in paragraph (l) of this section.

(g) Debits are generated by the difference between the actual emissions from a Group 1 emission point that is uncontrolled or is controlled to a level less stringent than the reference control technology, and the emissions allowed for the Group 1 emission point. Debits shall be calculated as follows:

(1) The overall equation for calculating source-wide debits is:

$$\begin{aligned} \text{Debits} = & \sum_{i=1}^n \left( \text{EPV}_{i\text{ACTUAL}} - (0.02)\text{EPV}_{iu} \right) + \sum_{i=1}^n \left( \text{ES}_{i\text{ACTUAL}} \right. \\ & \left. - (0.05)\text{ES}_{iu} \right) + \sum_{i=1}^n \left( \text{ETR}_{i\text{ACTUAL}} - (0.02)\text{ETR}_{iu} \right) \\ & + \sum_{i=1}^n \left( \text{EWW}_{i\text{ACTUAL}} - \text{EWW}_{ic} \right) \end{aligned}$$

where:

Debits and all terms of the equation are in units of megagrams per month, and

$EPV_{iACTUAL}$ =Emissions from each Group 1 process vent *i* that is uncontrolled or is controlled to a level less stringent than the reference control technology. This is calculated according to paragraph (g)(2) of this section.

(0.02)  $EPV_{iu}$ =Emissions from each Group 1 vent *i* if the reference control technology had been applied to the uncontrolled emissions, calculated according to paragraph (g)(2) of this section.

$ES_{iACTUAL}$ =Emissions from each Group 1 storage vessel *i* that is uncontrolled or is controlled to a level less stringent than the reference control technology. This is calculated according to paragraph (g)(3) of this section.

(0.05)  $ES_{iu}$ =Emissions from each Group 1 storage vessel *i* if the reference control technology had been applied to the uncontrolled emissions, calculated according to paragraph (g)(3) of this section.

$ETR_{iACTUAL}$ =Emissions from each Group 1 transfer rack *i* that is uncontrolled or is controlled to a level less stringent than the reference control technology. This is calculated according to paragraph (g)(4) of this section.

(0.02)  $ETR_{iu}$ =Emissions from each Group 1 transfer rack *i* if the reference control technology had been applied to the uncontrolled emissions, calculated according to paragraph (g)(4) of this section.

$EWV_{iACTUAL}$ =Emissions from each Group 1 wastewater stream *i* that is uncontrolled or is controlled to a level less stringent than the reference control technology. This is calculated according to paragraph (g)(5) of this section.

$EWV_{iu}$ =Emissions from each Group 1 wastewater stream *i* if the reference control technology had been applied to the uncontrolled emissions. This is calculated according to paragraph (g)(5) of this section.

*n*=The number of emission points being included in the emissions average. The value of *n* is not necessarily

the same for process vents, storage vessels, transfer racks, and wastewater.

(2) Emissions from process vents shall be calculated as follows:

(i) For purposes of determining process vent stream flow rate, organic HAP concentrations, and temperature, the sampling site shall be after the final product recovery device, if any recovery devices are present; before any control device (for process vents, recovery devices shall not be considered control devices); and before discharge to the atmosphere. Method 1 or 1A of part 60, appendix A, shall be used for selection of the sampling site.

(ii) The following equation shall be used for each process vent *i* to calculate  $EPV_{iu}$ :

$$EPV_{iu} = (2.494 \times 10^{-9}) Qh \left( \sum_{j=1}^n C_j M_j \right)$$

where:

$EPV_{iu}$ =Uncontrolled process vent emission rate from process vent *i*, megagrams per month.

*Q*=Vent stream flow rate, dry standard cubic meters per minute, measured using Method 2, 2A, 2C, or 2D of part 60, appendix A, as appropriate.

*h*=Monthly hours of operation during which positive flow is present in the vent, hours per month.

*C<sub>j</sub>*=Concentration, parts per million by volume, dry basis, of organic HAP *j* as measured by Method 18 of part 60, appendix A.

*M<sub>j</sub>*=Molecular weight of organic HAP *j*, gram per gram-mole.

*n*=Number of organic HAP's.

(A) The values of *Q*, *C<sub>j</sub>*, and *M<sub>j</sub>* shall be determined during a performance test conducted under representative operating conditions. The values of *Q*, *C<sub>j</sub>*, and *M<sub>j</sub>* shall be established in the Notification of Compliance Status and must be updated as provided in paragraph (g)(2)(ii)(B) of this section.

(B) If there is a change in capacity utilization other than a change in monthly operating hours, or if any other change is made to the process or product recovery equipment or operation such that the previously measured values of *Q*, *C<sub>j</sub>*, and *M<sub>j</sub>* are no

longer representative, a new performance test shall be conducted to determine new representative values of Q, C<sub>j</sub>, and M<sub>j</sub>. These new values shall be used to calculate debits and credits from the time of the change forward, and the new values shall be reported in the next Periodic Report.

(iii) The following procedures and equations shall be used to calculate EPV<sub>iACTUAL</sub>:

$$EPV_{iACTUAL} = EPV_{iu} \times \left( 1 - \frac{\text{Percent reduction}}{100\%} \right)$$

(1) The percent reduction shall be measured according to the procedures in §63.116 of this subpart if a combustion control device is used. For a flare meeting the criteria in §63.116(a) of this subpart, or a boiler or process heater meeting the criteria in §63.116(b) of this subpart, the percent reduction shall be 98 percent. If a non-combustion control device is used, percent reduction shall be demonstrated by a performance test at the inlet and outlet of the device, or, if testing is not feasible, by a control design evaluation and documented engineering calculations.

(2) For determining debits from Group 1 process vents, product recovery devices shall not be considered control devices and cannot be assigned a percent reduction in calculating EPV<sub>iACTUAL</sub>. The sampling site for measurement of uncontrolled emissions is after the final product recovery device. However, as provided in §63.113(a)(3) of this subpart, a Group 1 process vent may add sufficient product recovery to raise the TRE index value above 1.0, thereby becoming a Group 2 process vent.

(3) Procedures for calculating the percent reduction of pollution preven-

(A) If the vent is not controlled by a control device or pollution prevention measure, EPV<sub>iACTUAL</sub> = EPV<sub>iu</sub>, where EPV<sub>iu</sub> is calculated according to the procedures in paragraphs (g)(2)(i) and (g)(2)(ii) of this section.

(B) If the vent is controlled using a control device or a pollution prevention measure achieving less than 98-percent reduction,

tion measures are specified in paragraph (j) of this section.

(3) Emissions from storage vessels shall be calculated as follows:

(i) The following equation shall be used for each storage vessel i to calculate ES<sub>iu</sub>:

$$ES_{iu} = \frac{L_B + L_W}{12}$$

where:

ES<sub>iu</sub>=Uncontrolled emissions, defined as emissions from a fixed roof vessel having identical dimensions and vessel color as vessel i, megagrams per month.

L<sub>B</sub>=Breathing loss emissions, megagrams per year, calculated according to paragraph (g)(3)(i)(A) of this section.

L<sub>W</sub>=Working loss emissions, megagrams per year, calculated according to paragraph (g)(3)(i)(B) of this section.

12=Constant, months per year.

(A) Breathing loss emissions shall be calculated using the following equation:

$$L_B = 1.02 \times 10^{-5} M_v \left( \frac{P}{P_A - P} \right) 0.68_D 1.73_H 0.51_{\Delta T} 0.50_{F_p C K C}$$

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where:

$M_v$ =Molecular weight of vapor in storage vessel, pound per pound-mole.

$P_A$ =Average atmospheric pressure, pounds per square inch absolute.

$P$ =True vapor pressure of the HAP at liquid storage temperature, pounds per square inch absolute. See table 21 of this subpart.

$D$  = Tank diameter, feet.

$H$ =Average vapor space height, feet. Use vessel-specific values or an assumed value of one-half the height.

$\Delta T$ =Average ambient diurnal temperature change, °F. A typical value of 20 °F may be used.

$F_p$ =Paint factor, dimensionless, from table 22 of this subpart; use  $F_p=1$  for vessels located indoors.

$C$ =Adjustment factor for small diameter tanks, dimensionless; use  $C=1$  for diameter  $\geq 30$  feet; use  $C = 0.0771D - 0.0013D^2 - 0.1334$  for diameter  $< 30$  feet.

$K_C$ =Product factor, dimensionless. Use 1.0 for organic HAP's.

(B) Working losses shall be calculated using the following equation:

$$L_w = 1.089 \times 10^{-8} M_v (P)(V)(N)(K_N)(K_C)$$

where:

$V$ =Tank capacity, gallon.

$N$ =Number of turnovers per year.

$K_N$ =Turnover factor, dimensionless, and

$$K_N = \frac{180 + N}{6N} \text{ for turnovers } > 36$$

$$K_N = 1 \text{ for turnovers } \leq 36.$$

$M_v$ ,  $P$ , and  $K_C$  as defined in paragraph (g)(3)(i)(A) of this section.

(C) The owner or operator may elect to calculate  $ES_{iu}$  in accordance with the methods described in American Petroleum Institute Publication 2518, Evaporative Loss from Fixed-Roof Tanks (incorporated by reference as specified in §63.14 of this part).

(1) The owner or operator who elects to use these alternative methods must use them for all storage vessels included in the emissions average as debit or credit generating points.

(2) The equations of paragraphs (g)(3)(i)(A) and (g)(3)(i)(B) of this section shall not be used in conjunction with the alternative methods provided under paragraph (g)(3)(i)(C) of this section.

(ii) The following procedures and equations shall be used for each fixed roof storage vessel  $i$  that is not controlled with a floating roof to calculate  $ES_{iACTUAL}$ :

(A) If the vessel is not controlled,  $ES_{iACTUAL} = ES_{iu}$ , where  $ES_{iu}$  is calculated according to the procedures in paragraph (g)(3)(i) of this section.

(B) Except as provided in paragraph (g)(3)(ii)(C) of this section, if the vessel is controlled using a control device or pollution prevention measure achieving less than 95-percent reduction,

$$ES_{iACTUAL} = ES_{iu} * \left( \frac{1 - \text{Percent reduction}}{100} \right)$$

(1) The percent reduction for a control device shall be determined through a design evaluation according to the procedures specified in §63.120(d) of this subpart.

(2) Procedures for calculating the percent reduction for pollution prevention measures are specified in paragraph (j) of this section.

(C) If the vessel is controlled according to the provisions of §63.119(e)(2) of

this section whereby the control device is only required to achieve at least 90-percent reduction, the vessel shall not be considered to be generating debits.

(iii) The following equation shall be used for each internal floating roof vessel  $i$  that does not meet the specifications of §63.119(b) or (d) of this subpart to calculate  $ES_{iACTUAL}$ :

$$ES_{iACTUAL} = \frac{L_W + L_R + L_F + L_D}{12}$$

where:

$L_W$ =Withdrawal loss emissions, megagrams per year, calculated according to paragraph (g)(3)(iii)(A) of this section.

$L_R$ =Rim seal loss emissions, megagrams per year, calculated according to paragraph (g)(3)(iii)(B) of this section.

$L_F$ =Fitting loss emissions, megagrams per year, calculated according to paragraph (g)(3)(iii)(C) of this section.

$L_D$ =Deck seam loss emissions, megagrams per year, calculated according to paragraph (g)(3)(iii)(D) of this section.

12=Constant, months per year.

(A) Withdrawal loss emissions shall be calculated using the following equation:

$$L_W = \frac{1.018 \times 10^{-5} QCW_L \left[ 1 + \left( \frac{N_c F_c}{D} \right) \right]}{D}$$

where:

$Q$ =Throughput, gallon per year; (gallon/turnover) \* (turnovers per year).

$C$ =Shell clingage factor, barrel per 1,000 square foot, see table 23 of this subpart.

$WL$ =Average liquid density, pound per gallon.

$D$ =Tank diameter, feet.

$N_c$ =Number of columns, dimensionless, see table 24 of this subpart.

$F_c$ =Effective column diameter, feet [column perimeter (feet)÷3.1416], see table 25 of this subpart.

(B) Rim seal loss emissions shall be calculated using the following equation:

$$F_f = \sum_{i=1}^n (N_{F_i} K_{F_i}) = \left[ (N_{F_1} K_{F_1}) + (N_{F_2} K_{F_2}) + \dots + (N_{F_n} K_{F_n}) \right]$$

$$L_R = \frac{K_s V^n P^* D M_v K_c}{2,205}$$

where:

$M_v$ =Molecular weight of vapor in storage vessel, pound per pound-mole.

$D$ =Tank diameter, feet.

$K_c$ =Product factor, dimensionless; use 1.0 for organic HAP's.

$K_s$ =Seal factor, pound-mole per [foot (miles per hour)<sup>n</sup> year], see table 26 of this subpart.

$V$ =Average wind speed at the source, miles per hour. A value of 10 miles per hour may be assumed if source-specific data are not available.

$n$ =Seal related wind speed exponent, dimensionless, see table 26 of this subpart.

2,205=Constant, pounds per megagram.

$P^*$ =Vapor pressure function, dimensionless, and

$$P^* = \frac{\frac{P}{P_A}}{\left[ 1 + \left( 1 - \frac{P}{P_A} \right) 0.5 \right]^2}$$

where:

$P_A$ =Average atmospheric pressure, pounds per square inch absolute.

$P$ =True vapor pressure at liquid storage temperature, pounds per square inch absolute.

(C) Fitting loss emissions shall be calculated using the following equation:

$$L_F = \frac{F_f P^* M_v K_c}{2,205}$$

where:

$F_f$ =The total deck fitting loss factor, pound-mole per year, and

where:

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$N_{Fi}$ =Number of fittings of a particular type, dimensionless.  $N_{Fi}$  is determined for the specific tank or estimated from tables 24 and 27 of this subpart.

$K_{Fi}$ =Deck fitting loss factor for a particular type fitting, pound-mole per year.  $K_{Fi}$  is determined for each fitting type from table 27 of this subpart.

$n$ =Number of different types of fittings, dimensionless.

$P^*$ ,  $M_v$ ,  $K_c$ , and 2,205 as defined in paragraph (g)(3)(iii)(B) of this section.

(D) Deck seam loss emissions shall be calculated using the following equation:

$$L_D = \frac{K_D S_D D^2 P^* M_v K_c}{2,205}$$

where:

$K_D$ =Deck seam loss factor, pound-mole per foot per year, and

$K_D=0.34$  for non-welded decks.

$K_D=0$  for welded decks.

$S_D$ =Deck seam length factor, feet per square foot, see table 28 of this subpart.

$D$ ,  $P^*$ ,  $M_v$ ,  $K_c$ , and 2,205 as defined in paragraph (g)(3)(iii)(B) of this section.

(iv) The following equation shall be used for each external floating roof vessel  $i$  that does not meet the specifications of §63.119(c) of this subpart to calculate  $ES_{iACTUAL}$ :

$$ES_{iACTUAL} = \frac{L_W + L_R + L_F}{12}$$

where:

$L_W$ =Withdrawal loss emissions, megagrams per year, calculated according to paragraph (g)(3)(iv)(A) of this section.

$L_R$ =Rim seal loss emissions, megagrams per year, calculated according to paragraph (g)(3)(iv)(B) of this section.

$L_F$ =Fitting loss emissions, megagrams per year, calculated according to paragraph (g)(3)(iv)(C) of this section.

12=Constant, months per year.

(A) Withdrawal loss emissions shall be calculated using the following equation:

$$L_W = \frac{4.28 \cdot 10^{-4} Q C W_L}{D}$$

where:

$Q$ =Throughput, gallons per year.

$C$ =Shell clingage factor, barrel per 1,000 square foot, see table 23 of this subpart.

$W_L$ =Average liquid density, pound per gallon.

$D$ =Vessel diameter, feet.

(B) Rim seal loss emissions shall be calculated using the following equation:

$$L_R = \frac{K_s V^N P^* D M_v K_c}{2,205}$$

where:

$K_s$ =Seal factor, pound-mole per [foot (miles per hour) <sup>$N$</sup>  year], see table 29 of this subpart.

$V$ =Average wind speed, miles per hour, at the source. A value of 10 miles per hour may be assumed if source-specific data are not available.

$N$ =Seal wind speed exponent, dimensionless, see table 29 of this subpart.

$P^*$ =Vapor pressure function, dimensionless, as defined in paragraph (g)(3)(iii)(B) of this section.

$D$ =Vessel diameter, feet.

$M_v$ =Molecular weight of the HAP, pound per pound-mole.

$K_c$ =Product factor, dimensionless; use 1.0 for organic HAP's.

2,205=Constant, pounds per megagram.

(C) Fitting loss emissions shall be calculated using the following equation:

$$L_F = \frac{F_F P^* M_v K_c}{2,205}$$

where:

$F_F$ =The total deck fitting loss factor, pound-mole per year, and

$$F_F = \sum_{i=1}^n (N_{F_i} K_{F_i}) = \left[ (N_{F_1} K_{F_1}) + (N_{F_2} K_{F_2}) + \dots + (N_{F_n} K_{F_n}) \right]$$

where:

$N_{F_i}$  = Number of fittings of a particular type, dimensionless.  $N_{F_i}$  is determined for the specific tank or estimated from tables 30 through 32 of this subpart.

$K_{F_i}$  = Deck fitting loss factor for a particular type fitting, pound-mole per year, and

$K_{F_i} = K_{F_{ai}} + K_{F_{bi}} V^{mi}$ , pound-mole per year, see table 30 of this subpart for the appropriate values of  $K_{F_{ai}}$ ,  $K_{F_{bi}}$ , and  $m$  for each fitting type.

$V$ ,  $P^*$ ,  $M_v$ ,  $K_c$ , and 2,205 as defined in paragraph (g)(3)(iv)(B) of this section.

(4) Emissions from transfer racks shall be calculated as follows:

(i) The following equation shall be used for each transfer rack  $i$  to calculate  $ETR_{iu}$ :

$$ETR_{iu} = \left( 1.20 \times 10^{-7} \right) \frac{SPMG}{T}$$

where:

$ETR_{iu}$  = Uncontrolled transfer HAP emission rate from transfer rack  $i$ , megagrams per month.

$S$  = Saturation factor, dimensionless (see table 33 of this subpart).

$P$  = Weighted average rack partial pressure of organic HAP's transferred at the rack during the month, kilopascals.

$M$  = Weighted average molecular weight of organic HAP's trans-

ferred at the transfer rack during the month, gram per gram-mole.

$G$  = Monthly volume of organic HAP's transferred, liters per month.

$T$  = Weighted rack bulk liquid loading temperature during the month, Kelvin ( $^{\circ}C + 273$ ).

(ii) The following equation shall be used for each transfer rack  $i$  to calculate the weighted average rack partial pressure:

$$P = \frac{\sum_{j=1}^n (P_j)(G_j)}{G}$$

where:

$P_j$  = Maximum true vapor pressure of individual organic HAP transferred at the rack, kilopascals.

$G$  = Monthly volume of organic HAP transferred, liters per month, and

$$G = \sum_{j=1}^n G_j$$

$G_j$  = Monthly volume of individual organic HAP transferred at the transfer rack, liters per month.

$n$  = Number of organic HAP's transferred at the transfer rack.

(iii) The following equation shall be used for each transfer rack  $i$  to calculate the weighted average rack molecular weight:

$$M = \frac{\sum_{j=1}^n (M_j)(G_j)}{G}$$

where:

$M_j$  = Molecular weight of individual organic HAP transferred at the rack, gram per gram-mole.

$G$ ,  $G_j$ , and  $n$  as defined in paragraph (g)(4)(ii) of this section.

(iv) The following equation shall be used for each transfer rack *i* to calculate the monthly weighted rack bulk liquid loading temperature:

$$T = \frac{\sum_{j=1}^n (T_j)(G_j)}{G}$$

where:

$T_j$  = Average annual bulk temperature of individual organic HAP loaded at the transfer rack, Kelvin ( $^{\circ}\text{C} + 273$ ).

$G$ ,  $G_j$ , and  $n$  as defined in paragraph (g)(4)(ii) of this section.

(v) The following procedures and equations shall be used to calculate  $\text{ETR}_{i\text{ACTUAL}}$ :

(A) If the transfer rack is not controlled,  $\text{ETR}_{i\text{ACTUAL}} = \text{ETR}_{i\text{u}}$ , where  $\text{ETR}_{i\text{u}}$  is calculated using the equations specified in paragraphs (g)(4)(i) through (g)(4)(iv) of this section.

(B) If the transfer rack is controlled using a control device or a pollution prevention measure achieving less than the 98-percent reduction,

$$\text{ETR}_{i\text{ACTUAL}} = \text{ETR}_{i\text{u}} \left( \frac{1 - \text{Percent reduction}}{100\%} \right)$$

(1) The percent reduction for a control device shall be measured according to the procedures and test methods specified in §63.128(a) of this subpart. For a flare meeting the criteria in §63.128(b) of this subpart or a boiler or process heater meeting the criteria in §63.128(c) of this subpart, the percent reduction shall be 98 percent. If testing is not feasible, percent reduction shall be determined through a design evaluation

according to the procedures specified in §63.128(h) of this subpart.

(2) Procedures for calculating the percent reduction for pollution prevention measures are specified in paragraph (j) of this section.

(5) Emissions from wastewater shall be calculated as follows:

(i) The following equation shall be used for each wastewater stream *i* to calculate  $\text{EWW}_{i\text{c}}$ :

$$\text{EWW}_{i\text{c}} = (6.0 * 10^{-8}) Q_i H_i \sum_{m=1}^s (1 - \text{Fr}_m) \text{Fe}_m \text{HAP}_{i\text{m}} + (0.05) (6.0 * 10^{-8}) Q_i H_i \sum_{m=1}^s (\text{Fr}_m \text{HAP}_{i\text{m}})$$

Where:

$\text{EWW}_{i\text{c}}$  = Monthly wastewater stream emission rate if wastewater stream *i* is controlled by the reference control technology, megagrams per month.

$Q_i$  = Average flow rate for wastewater stream *i*, as determined by the procedure in §63.144(c)(3), liters per minute.

$H_i$  = Number of hours during the month that wastewater stream *i* was generated, hours per month.

$s$  = Total number of organic HAP in wastewater stream *i*.

$\text{Fr}_m$  = Fraction removed of organic HAP *m* in wastewater, from table 9 of this subpart, dimensionless.

$\text{Fe}_m$  = Fraction emitted of organic HAP *m* in wastewater, from table 34 of this subpart, dimensionless.

HAP<sub>im</sub> = Average concentration of organic HAP m in wastewater stream i, parts per million by weight.

(A) HAP<sub>im</sub> shall be determined for the point of generation or at a location downstream of the point of generation using the sampling procedure in §63.144(b)(5)(i)(C) of this subpart. The samples collected may be analyzed by either of the following procedures:

(1) A test method or results from a test method that measures organic HAP concentrations in the wastewater, and that has been validated pursuant to section 5.1 or 5.3 of Method 301 of appendix A of this part may be used; or

(2) Method 305 of appendix A of this part may be used to determine C<sub>im</sub>, the average VOHAP concentration of organic HAP m in wastewater stream i, and then HAP<sub>im</sub> may be calculated using the following equation:

$$HAP_{im} = C_{im}/Fm_m,$$

where Fm<sub>m</sub> for organic HAP m is obtained from table 34 of this subpart.

(B) Values for Q<sub>i</sub>, HAP<sub>im</sub>, and C<sub>im</sub> shall be determined during a performance

test conducted under representative conditions. The average value obtained from three test runs shall be used. The values of Q<sub>i</sub>, HAP<sub>im</sub>, and C<sub>im</sub> shall be established in the Notification of Compliance Status and must be updated as provided in paragraph (g)(5)(i)(C) of this section.

(C) If there is a change to the process or operation such that the previously measured values of Q<sub>i</sub>, HAP<sub>im</sub>, and C<sub>im</sub> are no longer representative, a new performance test shall be conducted to determine new representative values of Q<sub>i</sub>, HAP<sub>im</sub>, and C<sub>im</sub>. These new values shall be used to calculate debits and credits from the time of the change forward, and the new values shall be reported in the next Periodic Report.

(ii) The following equation shall be used to calculate EWW<sub>iACTUAL</sub> for each wastewater stream i that is not managed according to the provisions for waste management units of §§63.133 through 63.137 or §63.138(i)(3) of this subpart, as applicable, which specify equipment and work practices for suppressing and controlling vapors.

$$EWW_{iACTUAL} = (6.0 \times 10^{-8}) Q_i H_i \sum_{m=1}^s Fe_m HAP_{im}$$

where:

EWW<sub>iACTUAL</sub> = Monthly wastewater stream emission rate if wastewater stream i is uncontrolled or is controlled to a level less stringent than the reference control technology, megagrams per month.

Q<sub>i</sub>, H<sub>i</sub>, s, Fe<sub>m</sub>, and HAP<sub>im</sub> are as defined and determined according to paragraph (g)(5)(i) of this section.

(iii) The following equation shall be used to calculate EWW<sub>iACTUAL</sub> for each

wastewater stream i that is managed according to the requirements of §§63.133 through 63.137 or §63.138(i)(3) of this subpart, as applicable, and wastewater stream i is uncontrolled or is controlled to a level less stringent than the reference control technology (for the purposes of the wastewater emissions averaging provisions, the term control is used to mean treatment):

$$EWW_{iACTUAL} = \left(6.0 \times 10^{-8}\right) Q_i H_i \sum_{m=1}^s \left[ Fe_m HAP_{im} (1 - PR_{im}) \right] + \left(1 - \frac{R_i}{100\%}\right) \left(6.0 \times 10^{-8}\right) Q_i H_i \sum_{m=1}^s (HAP_{im} PR_{im})$$

where:

$EWW_{iACTUAL}$  = Monthly wastewater stream emission rate if wastewater stream i is uncontrolled or is controlled to a level less stringent than the reference control technology, megagrams per month.

$PR_{im}$  = The efficiency of the treatment process, or series of treatment processes, which treat wastewater stream i, in reducing the emission potential of organic HAP m in wastewater, dimensionless, as calculated by:

$$PR_{im} = \frac{HAP_{im-in} - HAP_{im-out}}{HAP_{im-in}}$$

where:

$HAP_{im-in}$  = Average concentration of organic HAP m, parts per million by weight, as defined and determined according to paragraph (g)(5)(i) of this section, in the wastewater entering the first treatment process in the series.

$HAP_{im-out}$  = Average concentration of organic HAP m, parts per million by weight, as defined and determined according to paragraph (g)(5)(i) of this section, in the wastewater exiting the last treatment process in the series.

$R_i$  = Reduction efficiency of the device used to control any vapor streams emitted and collected from wastewater stream i during treat-

ment, dimensionless, as determined according to the procedures in § 63.145(e) of this subpart.

$Q_i$ ,  $H_i$ ,  $s$ ,  $Fe_m$ , and  $HAP_{im}$  are as defined and determined according to paragraph (g)(5)(i) of this section.

(h) Credits are generated by the difference between emissions that are allowed for each Group 1 and Group 2 emission point and the actual emissions from a Group 1 or Group 2 emission point that has been controlled after November 15, 1990 to a level more stringent than what is required by this subpart or any other State or Federal rule or statute. Credits shall be calculated as follows:

(1) The overall equation for calculating source-wide credits is:

$$\begin{aligned} \text{Credits} = & D \sum_{i=1}^n ((0.02) EPV1_{iu} - EPV1_{iACTUAL}) + D \sum_{i=1}^m (EPV2_{iBASE} - EPV2_{iACTUAL}) + D \sum_{i=1}^n \\ & ((0.05) ES1_{iu} - ES1_{iACTUAL}) + D \sum_{i=1}^m (ES2_{iBASE} - ES2_{iACTUAL}) + D \sum_{i=1}^n ((0.02) ETR1_{iu} - ETR1_{iACTUAL}) \\ & + D \sum_{i=1}^m (ETR2_{iBASE} - ETR2_{iACTUAL}) + D \sum_{i=1}^n (EWW1_{ic} - EWW1_{iACTUAL}) + D \sum_{i=1}^m (EWW2_{iBASE} - EWW2_{iACTUAL}) \end{aligned}$$

where: Credits and all terms of the equation are in units of megagrams per month, the baseline date is November 15, 1990, and:

D = Discount factor = 0.9 for all credit generating emission points except those controlled by a pollution prevention measure, which will not be discounted.

$EPV1_{iACTUAL}$  = Emissions for each Group 1 process vent i that is controlled to a level more stringent than the reference control technology, calculated according to paragraph (h)(2) of this section.

(0.02)  $EPV1_{iu}$  = Emissions from each Group 1 process vent i if the reference control technology had been

applied to the uncontrolled emissions.  $EPV_{1iu}$  is calculated according to paragraph (h)(2) of this section.

$EPV_{2iACTUAL}$ =Emissions from each Group 2 process vent i that is controlled, calculated according to paragraph (h)(2) of this section.

$EPV_{2iBASE}$ =Emissions from each Group 2 process vent i at the baseline date, as calculated in paragraph (h)(2) of this section.

$ES_{1iACTUAL}$ =Emissions from each Group 1 storage vessel i that is controlled to a level more stringent than the reference control technology, calculated according to paragraph (h)(3) of this section.

(0.05)  $ES_{1iu}$ =Emissions from each Group 1 storage vessel i if the reference control technology had been applied to the uncontrolled emissions.  $ES_{1iu}$  is calculated according to paragraph (h)(3) of this section.

$ES_{2iACTUAL}$ =Emissions from each Group 2 storage vessel i that is controlled, calculated according to paragraph (h)(3) of this section.

$ES_{2iBASE}$ =Emissions from each Group 2 storage vessel i at the baseline date, as calculated in paragraph (h)(3) of this section.

$ETR_{iACTUAL}$ =Emissions from each Group 1 transfer rack i that is controlled to a level more stringent than the reference control technology, calculated according to paragraph (h)(4) of this section.

(0.02)  $ETR_{1iu}$ =Emissions from each Group 1 transfer rack i if the reference control technology had been applied to the uncontrolled emissions.  $ETR_{1iu}$  is calculated according to paragraph (h)(4) of this section.

$ETR_{2iACTUAL}$ =Emissions from each Group 2 transfer rack i that are controlled, calculated according to paragraph (h)(4) of this section.

$ETR_{2iBASE}$ =Emissions from each Group 2 transfer rack i at the baseline date, as calculated in paragraph (h)(4) of this section.

$EWV_{iACTUAL}$  = Emissions from each Group 1 wastewater stream i that is controlled to a level more stringent than the reference control technology, calculated according to paragraph (h)(5) of this section.

$EWV_{1ic}$  = Emissions from each Group 1 wastewater stream i if the reference control technology had been applied to the uncontrolled emissions, calculated according to paragraph (h)(5) of this section.

$EWV_{2iACTUAL}$  = Emissions from each Group 2 wastewater stream i that is controlled, calculated according to paragraph (h)(5) of this section.

$EWV_{2iBASE}$  = Emissions from each Group 2 wastewater stream i at the baseline date, calculated according to paragraph (h)(5) of this section.

n = Number of Group 1 emission points included in the emissions average. The value of n is not necessarily the same for process vents, storage vessels, transfer racks, and wastewater.

m = Number of Group 2 emission points included in the emissions average. The value of m is not necessarily the same for process vents, storage vessels, transfer racks, and wastewater.

(i) For an emission point controlled using a reference control technology, the percent reduction for calculating credits shall be no greater than the nominal efficiency associated with the reference control technology, unless a higher nominal efficiency is assigned as specified in paragraph (h)(1)(ii) of this section.

(ii) For an emission point controlled to a level more stringent than the reference control technology, the nominal efficiency for calculating credits shall be assigned as described in paragraph (i) of this section. A reference control technology may be approved for use in a different manner and assigned a higher nominal efficiency according to the procedures in paragraph (i) of this section.

(iii) For an emission point controlled using a pollution prevention measure, the nominal efficiency for calculating credits shall be as determined as described in paragraph (j) of this section.

(2) Emissions from process vents shall be determined as follows:

(i) Uncontrolled emissions from Group 1 process vents,  $EPV_{1iu}$ , shall be calculated according to the procedures and equation for  $EPV_{iu}$  in paragraphs (g)(2)(i) and (g)(2)(ii) of this section.

(ii) Actual emissions from Group 1 process vents controlled using a technology with an approved nominal efficiency greater than 98 percent or a pol-

lution prevention measure achieving greater than 98 percent emission reduction,  $EPV_{iACTUAL}$ , shall be calculated according to the following equation:

$$EPV_{iACTUAL} = EPV_{iu} \left( 1 - \frac{\text{Nominal efficiency \%}}{100\%} \right)$$

(iii) The following procedures shall be used to calculate actual emissions from Group 2 process vents,  $EPV_{2ACTUAL}$ :

device applied as a pollution prevention project, or a pollution prevention measure, if the control achieves a percent reduction less than or equal to 98 percent reduction,

(A) For a Group 2 process vent controlled by a control device, a recovery

$$EPV_{2ACTUAL} = EPV_{2iu} \times \left( 1 - \frac{\text{Percent reduction}}{100\%} \right)$$

(1)  $EPV_{2iu}$  shall be calculated according to the equations and procedures for  $EPV_{iu}$  in paragraphs (g)(2)(i) and (g)(2)(ii) of this section, except as provided in paragraph (h)(2)(iii)(A)(3) of this section.

tion shall be used to calculate  $EPV_{2iu}$ ; however, the sampling site for measurement of vent stream flow rate and organic HAP concentration shall be at the inlet of the recovery device.

(2) The percent reduction shall be calculated according to the procedures in paragraphs (g)(2)(iii)(B)(1) through (g)(2)(iii)(B)(3) of this section, except as provided in paragraph (h)(2)(iii)(A)(4) of this section.

(4) If a recovery device was added as part of a pollution prevention project, the percent reduction shall be demonstrated by conducting a performance test at the inlet and outlet of that recovery device.

(3) If a recovery device was added as part of a pollution prevention project,  $EPV_{2iu}$  shall be calculated prior to that recovery device. The equation for  $EPV_{iu}$  in paragraph (g)(2)(ii) of this sec-

(B) For a Group 2 process vent controlled using a technology with an approved nominal efficiency greater than 98 percent or a pollution prevention measure achieving greater than 98 percent reduction,

$$EPV_{2ACTUAL} = EPV_{2iu} \left( 1 - \frac{\text{Nominal efficiency \%}}{100\%} \right)$$

(iv) Emissions from Group 2 process vents at baseline,  $EPV_{2iBASE}$ , shall be calculated as follows:

culated according to the procedures and equation for  $EPV_{iu}$  in paragraphs (g)(2)(i) and (g)(2)(ii) of this section.

(A) If the process vent was uncontrolled on November 15, 1990,  $EPV_{2iBASE} = EPV_{2iu}$  and shall be cal-

(B) If the process vent was controlled on November 15, 1990,

$$EPV2_{iBASE} = EPV2_{iu} \left( 1 - \frac{\text{Percent reduction \%}}{100\%} \right)$$

where  $EPV2_{iu}$  is calculated according to the procedures and equation for  $EPV_{iu}$  in paragraphs (g)(2)(i) and (g)(2)(ii) of this section. The percent reduction shall be calculated according to the procedures specified in paragraphs (g)(2)(iii)(B)(1) through (g)(2)(iii)(B)(3) of this section.

(C) If a recovery device was added to a process vent as part of a pollution prevention project initiated after November 15, 1990,  $EPV2_{iBASE} = EPV2_{iu}$ , where  $EPV2_{iu}$  is calculated according to paragraph (h)(2)(iii)(A)(3) of this section.

(3) Emissions from storage vessels shall be determined as follows:

(i) Uncontrolled emissions from Group 1 storage vessels,  $ES1_{iu}$ , shall be calculated according to the equations and procedures for  $ES_{iu}$  in paragraph (g)(3)(i) of this section.

(ii) Actual emissions from Group 1 storage vessels controlled using a technology with an approved nominal efficiency greater than 95 percent or a pollution prevention measure achieving greater than 95 percent emission reduction,  $ES1_{iACTUAL}$ , shall be calculated according to the following equation:

$$ES1_{iACTUAL} = ES1_{iu} \left( 1 - \frac{\text{Nominal efficiency \%}}{100\%} \right)$$

(iii) The following procedures shall be used to calculate actual emissions from Group 2 storage vessels,  $ES2_{iACTUAL}$ :

(A) For a Group 2 storage vessel controlled using a control device or a pol-

lution prevention measure (other than an internal or external floating roof) achieving a percent reduction less than or equal to 95-percent reduction,

$$ES2_{iACTUAL} = ES2_{iu} \times \left( 1 - \frac{\text{Percent reduction}}{100\%} \right)$$

(1)  $ES2_{iu}$  is calculated according to the equations and procedures for  $ES_{iu}$  in paragraph (g)(3)(i) of this section.

(2) The percent reduction shall be calculated according to the procedures in paragraphs (g)(3)(ii)(B)(1) and (g)(3)(ii)(B)(2) of this section.

(3) If an internal or external floating roof meeting the specifications of §63.119 (b), (c), or (d) of this subpart is used to control the vessel, the percent reduction shall be 95 percent.

(B) If a Group 2 storage vessel is controlled with an internal or external floating roof not meeting the specifications of §63.119 (b), (c), or (d) of this subpart,  $ES2_{iACTUAL}$  shall be calculated as specified for  $ES_{iACTUAL}$  in paragraph (g)(3)(iii) or (g)(3)(iv) of this section.

(C) For a Group 2 storage vessel controlled using a technology with an approved nominal efficiency greater than 95 percent or a pollution prevention measure achieving greater than 95 percent reduction,

$$ES2_{iACTUAL} = ES2_{iu} \left( 1 - \frac{\text{Nominal efficiency \%}}{100\%} \right)$$

(iv) Emissions from Group 2 storage vessels at baseline,  $ES2_{iBASE}$ , shall be calculated as follows:

(A) If the fixed-roof vessel was uncontrolled on November 15, 1990,  $ES2_{iBASE} = ES2_{iu}$  and shall be calculated according to the procedures and equations for  $ES_{iu}$  in paragraph (g)(3)(i) of this section.

(B) If the storage vessel was controlled on November 15, 1990:

(1) The equations for  $ES_{iACTUAL}$  in paragraph (g)(3)(iii) of this section shall be used to calculate  $ES2_{iBASE}$  for

vessels controlled with an internal floating roof that does not meet the specifications of §63.119 (b) or (d) of this subpart.

(2) The equations for  $ES_{iACTUAL}$  in paragraph (g)(3)(iv) of this section shall be used to calculate  $ES2_{iBASE}$  for vessels controlled with an external floating roof that does not meet the specifications of §63.119(c) of this subpart.

(3) The following equations shall be used to calculate  $ES2_{iBASE}$  for vessels controlled with a control device,

$$ES2_{iBASE} = ES2_{iu} \left( 1 - \frac{\text{Percent reduction \%}}{100\%} \right)$$

where  $ES2_{iu}$  shall be calculated according to the equations for  $ES_{iu}$  in paragraph (g)(3)(i) of this section. The percent reduction shall be calculated according to the procedures in paragraphs (g)(3)(ii)(B)(1) and (g)(3)(ii)(B)(2) of this section.

(4) Emissions from transfer racks shall be determined as follows:

(i) Uncontrolled emissions from Group 1 transfer racks,  $ETR1_{iu}$ , shall be calculated according to the procedures

and equations for  $ETR_{iu}$  as described in paragraphs (g)(4)(i) through (g)(4)(iv) of this section.

(ii) Actual emissions from Group 1 transfer racks controlled using a technology with an approved nominal efficiency greater than 98 percent or a pollution prevention measure achieving greater than 98 percent emission reduction,  $ETR_{iACTUAL}$ , shall be calculated according to the following equation:

$$ETR1_{iACTUAL} = ETR1_{iu} \left( 1 - \frac{\text{Nominal efficiency}}{100\%} \right)$$

(iii) The following procedures shall be used to calculate actual emissions from Group 2 transfer racks,  $ETR2_{iACTUAL}$ :

(A) For a Group 2 transfer rack controlled by a control device or a pollution prevention measure achieving a percent reduction less than or equal to 98 percent reduction,

$$ETR2_{iACTUAL} = ETR2_{iu} \left( 1 - \frac{\text{Percent reduction}}{100\%} \right)$$

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(1)  $ETR_{2iu}$  shall be calculated according to the equations and procedures for  $ETR_{iu}$  in paragraphs (g)(4)(i) through (g)(4)(iv) of this section.

(2) The percent reduction shall be calculated according to the procedures in paragraph (g)(4)(v)(B)(1) and (g)(4)(v)(B)(2) of this section.

(B) For a Group 2 transfer rack controlled using a technology with an approved nominal efficiency greater than 98 percent or a pollution prevention measure achieving greater than 98 percent reduction,

$$ETR_{2iACTUAL} = ETR_{2iu} \left( 1 - \frac{\text{Nominal efficiency}}{100\%} \right)$$

(iv) Emissions from Group 2 transfer racks at baseline,  $ETR_{2iBASE}$ , shall be calculated as follows:

(A) If the transfer rack was uncontrolled on November 15, 1990,  $ETR_{2iBASE} = ETR_{2iu}$  and shall be calculated

according to the procedures and equations for  $ETR_{iu}$  in paragraphs (g)(4)(i) through (g)(4)(iv) of this section.

(B) If the transfer rack was controlled on November 15, 1990,

$$ETR_{2iBASE} = ETR_{2iu} \left( 1 - \frac{\text{Percent reduction}}{100\%} \right)$$

where  $ETR_{2iu}$  is calculated according to the procedures and equations for  $ETR_{iu}$  in paragraphs (g)(4)(i) through (g)(4)(iv) of this section. Percent reduction shall be calculated according to the procedures in paragraphs (g)(4)(v)(B)(1) and (g)(4)(v)(B)(2) of this section.

(5) Emissions from wastewater shall be determined as follows:

(i)  $EWW_{1ic}$  shall be calculated according to the equation for  $EWW_{ic}$  in paragraph (g)(5)(i) of this section.

(ii)  $EWW_{2iBASE}$  shall be calculated according to the equation for  $EWW_{iACTUAL}$  in paragraph (g)(5)(ii) of this section for each Group 2 wastewater stream i, which, on November 15, 1990, was not managed according to the requirements of §§63.133 through 63.137 or §63.138(i)(3) of this subpart, as applicable.

(iii)  $EWW_{2iBASE}$  shall be calculated according to the equation for  $EWW_{iACTUAL}$  in paragraph (g)(5)(iii) of this section for each Group 2 wastewater stream i, which, on November 15, 1990, was managed according to the requirements of §§63.133 through 63.137 or §63.138(i)(3) of this subpart, as applicable, and was un-

controlled or controlled to a level less stringent than the reference control technology.

(iv) For Group 2 wastewater streams that are managed according to the requirements of §§63.133 through 63.137 or §63.138(i)(3) of this subpart, as applicable,  $EWW_{2iACTUAL}$  shall be calculated as follows:

(A)  $EWW_{2iACTUAL}$  shall be calculated according to the equation for  $EWW_{iACTUAL}$  in paragraph (g)(5)(iii) of this section for each Group 2 wastewater stream i that is controlled to a level less stringent than, or equivalent to, the reference control technology.

(B)  $EWW_{2iACTUAL}$  shall be calculated according to the procedures for calculating  $EWW_{iACTUAL}$  in paragraph (h)(5)(v) of this section for each Group 2 wastewater stream that is controlled to a level more stringent than the reference control technology.

(v) The following equations for  $EWW_{iACTUAL}$  shall be used to calculate emissions from each Group 1 wastewater stream i that is managed according to the requirements of

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§§ 63.133 through 63.137 or § 63.138(i)(3) of this subpart, as applicable, and is controlled to a level more stringent than the reference control technology.

(A) If the Group 1 wastewater stream *i* is controlled using a treatment process or series of treatment processes with an approved nominal reduction efficiency in the total VOHAP concentra-

tion of stream *i* greater than that of the design steam stripper specified in § 63.138(g) of this subpart, and the control device used to reduce organic HAP emissions from the vapor stream(s) vented from the treatment process(es) achieves a percent reduction equal to 95 percent, the following equation shall be used:

$$\begin{aligned}
 EWWI_{iACTUAL} = & \left(6.0 \times 10^{-8}\right) Q_i H_i \sum_{m=1}^s \left[ Fe_m HAP_{im} (1 - Fr_m) \right] \\
 & + \left( 1 - \frac{\text{Nominal efficiency \%}}{100} \right) \left( 6.0 \times 10^{-8} \right) Q_i H_i \sum_{m=1}^s \left[ HAP_{im} Fr_m \right]
 \end{aligned}$$

where all terms are as defined and determined in paragraph (g)(5) of this section.

(B) If the Group 1 wastewater stream *i* is not controlled using a treatment process or series of treatment processes with a nominal reduction efficiency in the total VOHAP concentration great-

er than that of the design steam stripper specified in § 63.138(g) of this subpart, but the vapor stream(s) vented from the treatment process(es) are controlled using a device with an approved nominal efficiency greater than 95 percent, the following equation shall be used:

$$\begin{aligned}
 EWWI_{iACTUAL} = & \left(6.0 \times 10^{-8}\right) Q_i H_i \sum_{m=1}^s \left[ Fe_m HAP_{im} (1 - Fr_m) \right] \\
 & + \left( 1 - \frac{\text{Nominal efficiency \%}}{100} \right) \left( 6.0 \times 10^{-8} \right) Q_i H_i \sum_{m=1}^s \left[ HAP_{im} Fr_m \right]
 \end{aligned}$$

where all terms other than nominal efficiency are as defined and determined in paragraph (g)(5) of this section.

(C) If the Group 1 wastewater stream *i* is controlled using a treatment process or series of treatment processes with an approved nominal reduction efficiency in the total VOHAP concentra-

tion greater than that of the design steam stripper specified in § 63.138(g) of this subpart, and the vapor stream(s) vented from the treatment process are controlled using a device with an approved nominal efficiency greater than 95 percent, the following equation shall be used:

$$\begin{aligned}
 \text{EWWI}_{\text{ACTUAL}} = & \left(6.0 \cdot 10^{-8}\right) Q_i H_i \sum_{m=1}^s \left[ \text{Fe}_m \text{HAP}_{im} (1 - \text{PR}_{im}) \right] \\
 & + \left( 1 - \frac{\text{Nominal efficiency \%}}{100} \right) \left( 6.0 \cdot 10^{-8} \right) Q_i H_i \sum_{m=1}^s \left[ \text{HAP}_{im} \text{PR}_{im} \right]
 \end{aligned}$$

where all terms other than nominal efficiency are as defined and determined in paragraph (g)(5) of this section.

(i) The following procedures shall be followed to establish nominal efficiencies. The procedures in paragraphs (i)(1) through (i)(6) of this section shall be followed for control technologies that are different in use or design from the reference control technologies and achieve greater percent reductions than the percent efficiencies assigned to the reference control technologies in §63.111 of this subpart.

(1) In those cases where the owner or operator is seeking permission to take credit for use of a control technology that is different in use or design from the reference control technology, and the different control technology will be used in more than three applications at a single plant-site, the owner or operator shall submit the information specified in paragraphs (i)(1)(i) through (i)(1)(iv) of this section to the Director of the EPA Office of Air Quality Planning and Standards in writing:

(i) Emission stream characteristics of each emission point to which the control technology is or will be applied including the kind of emission point, flow, organic HAP concentration, and all other stream characteristics necessary to design the control technology or determine its performance.

(ii) Description of the control technology including design specifications.

(iii) Documentation demonstrating to the Administrator's satisfaction the control efficiency of the control technology. This may include performance test data collected using an appropriate EPA method or any other method validated according to Method 301 of appendix A of this part. If it is infeasible to obtain test data, documentation may include a design evaluation and calculations. The engineering basis of the calculation procedures and all in-

puts and assumptions made in the calculations shall be documented.

(iv) A description of the parameter or parameters to be monitored to ensure that the control technology will be operated in conformance with its design and an explanation of the criteria used for selection of that parameter (or parameters).

(2) The Administrator shall determine within 120 calendar days whether an application presents sufficient information to determine nominal efficiency. The Administrator reserves the right to request specific data in addition to the items listed in paragraph (i)(1) of this section.

(3) The Administrator shall determine within 120 calendar days of the submittal of sufficient data whether a control technology shall have a nominal efficiency and the level of that nominal efficiency. If, in the Administrator's judgment, the control technology achieves a level of emission reduction greater than the reference control technology for a particular kind of emission point, the Administrator will publish a FEDERAL REGISTER notice establishing a nominal efficiency for the control technology.

(4) The Administrator may condition permission to take emission credits for use of the control technology on requirements that may be necessary to ensure operation and maintenance to achieve the specified nominal efficiency.

(5) In those cases where the owner or operator is seeking permission to take credit for use of a control technology that is different in use or design from the reference control technology and the different control technology will be used in no more than three applications at a single plant site, the information listed in paragraphs (i)(1)(i) through (i)(1)(iv) can be submitted to the permitting authority for the source

for approval instead of the Administrator.

(i) In these instances, use and conditions for use of the control technology can be approved by the permitting authority as part of an operating permit application or modification. The permitting authority shall follow the procedures specified in paragraphs (i)(2) through (i)(4) of this section except that, in these instances, a FEDERAL REGISTER notice is not required to establish the nominal efficiency for the different technology.

(ii) If, in reviewing the application, the permitting authority believes the control technology has broad applicability for use by other sources, the permitting authority shall submit the information provided in the application to the Director of the EPA Office of Air Quality Planning and Standards. The Administrator shall review the technology for broad applicability and may publish a FEDERAL REGISTER notice; however, this review shall not affect the permitting authority's approval of the nominal efficiency of the control technology for the specific application.

(6) If, in reviewing an application for a control technology for an emission point, the Administrator or permitting authority determines the control technology is not different in use or design from the reference control technology, the Administrator or permitting authority shall deny the application.

(j) The following procedures shall be used for calculating the efficiency (percent reduction) of pollution prevention measures:

(1) A pollution prevention measure is any practice which meets the criteria of paragraphs (j)(1)(i) and (j)(1)(ii) of this section.

(i) A pollution prevention measure is any practice that results in a lesser quantity of organic HAP emissions per unit of product released to the atmosphere prior to out-of-process recycling, treatment, or control of emissions, while the same product is produced.

(ii) Pollution prevention measures may include: substitution of feedstocks that reduce HAP emissions; alterations to the production process to reduce the volume of materials released to the environment; equipment modifications; housekeeping measures; and in-process recycling that returns waste materials directly to production as raw materials. Production cutbacks do not qualify as pollution prevention.

(2) The emission reduction efficiency of pollution prevention measures implemented after November 15, 1990, can be used in calculating the actual emissions from an emission point in the debit and credit equations in paragraphs (g) and (h) of this section.

(i) For pollution prevention measures, the percent reduction used in the equations in paragraphs (g)(2) through (g)(5) of this section and paragraphs (h)(2) through (h)(5) of this section is the percent difference between the monthly organic HAP emissions for each emission point after the pollution prevention measure for the most recent month versus monthly emissions from the same emission point before the pollution prevention measure, adjusted by the volume of product produced during the two monthly periods.

(ii) The following equation shall be used to calculate the percent reduction of a pollution prevention measure for each emission point.

$$\text{Percent reduction} = \frac{E_B - \frac{(E_{PP} \times P_B)}{P_{PP}}}{E_B} \times 100\%$$

where:

Percent reduction=Efficiency of pollution prevention measure (percent organic HAP reduction).

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$E_B$ =Monthly emissions before the pollution prevention measure, megagrams per month, determined as specified in paragraphs (j)(2)(ii)(A), (j)(2)(ii)(B), and (j)(2)(ii)(C) of this section.

$E_{pp}$ =Monthly emissions after the pollution prevention measure, megagrams per month, as determined for the most recent month, determined as specified in paragraphs (j)(2)(ii)(D) or (j)(2)(ii)(E) of this section.

$P_B$ =Monthly production before the pollution prevention measure, megagrams per month, during the

same period over which  $E_B$  is calculated.

$P_{pp}$ =Monthly production after the pollution prevention measure, megagrams per month, as determined for the most recent month.

(A) The monthly emissions before the pollution prevention measure,  $E_B$ , shall be determined in a manner consistent with the equations and procedures in paragraphs (g)(2), (g)(3), and (g)(4) of this section for process vents, storage vessels, and transfer operations.

(B) For wastewater,  $E_B$  shall be calculated as follows:

$$E_B = \sum_{i=1}^n \left[ (6.0 \cdot 10^{-8}) Q_{Bi} H_{Bi} \sum_{m=1}^s Fe_m HAP_{Bim} \right]$$

where:

$n$ =Number of wastewater streams.

$Q_{Bi}$ =Average flow rate for wastewater stream  $i$  before the pollution prevention measure, defined and determined according to paragraph (g)(5)(i) of this section, liters per minute, before implementation of the pollution prevention measure.

$H_{Bi}$ =Number of hours per month that wastewater stream  $i$  was discharged before the pollution prevention measure, hours per month.

$s$ =Total number of organic HAP's in wastewater stream  $i$ .

$Fe_m$ =Fraction emitted of organic HAP  $m$  in wastewater from table 9 of this subpart, dimensionless.

$HAP_{Bim}$ =Average concentration of organic HAP  $m$  in wastewater stream  $i$ , defined and determined according

to paragraph (g)(5)(i) of this section, before the pollution prevention measure, parts per million by weight, as measured before the implementation of the pollution measure.

(C) If the pollution prevention measure was implemented prior to April 22, 1994, records may be used to determine  $E_B$ .

(D) The monthly emissions after the pollution prevention measure,  $E_{pp}$ , may be determined during a performance test or by a design evaluation and documented engineering calculations. Once an emissions-to-production ratio has been established, the ratio can be used to estimate monthly emissions from monthly production records.

(E) For wastewater,  $E_{pp}$  shall be calculated using the following equation:

$$E_{pp} = \sum_{i=1}^n \left[ (6.0 \cdot 10^{-8}) Q_{ppi} H_{ppi} \sum_{m=1}^s Fe_m HAP_{ppim} \right]$$

where  $n$ ,  $Q_{ppi}$ ,  $H_{ppi}$ ,  $s$ ,  $Fe_m$ , and  $HAP_{ppim}$  are defined and determined as described in paragraph (j)(2)(ii)(B) of this section except that  $Q_{ppi}$ ,  $H_{ppi}$ , and  $HAP_{ppim}$  shall be determined after the

pollution prevention measure has been implemented.

(iii) All equations, calculations, test procedures, test results, and other information used to determine the percent reduction achieved by a pollution prevention measure for each emission point shall be fully documented.

(iv) The same pollution prevention measure may reduce emissions from multiple emission points. In such cases, the percent reduction in emissions for each emission point must be calculated.

(v) For the purposes of the equations in paragraphs (h)(2) through (h)(5) of this section, used to calculate credits for emission points controlled more stringently than the reference control technology, the nominal efficiency of a pollution prevention measure is equivalent to the percent reduction of the pollution prevention measure. When a pollution prevention measure is used, the owner or operator of a source is not required to apply to the Administrator for a nominal efficiency and is not subject to paragraph (i) of this section.

(k) The owner or operator must demonstrate that the emissions from the emission points proposed to be included in the average will not result in greater hazard or, at the option of the operating permit authority, greater risk to human health or the environment than if the emission points were controlled according to the provisions in §§ 63.113 through 63.148.

(1) This demonstration of hazard or risk equivalency shall be made to the satisfaction of the operating permit authority.

(i) The Administrator may require owners and operators to use specific methodologies and procedures for making a hazard or risk determination.

(ii) The demonstration and approval of hazard or risk equivalency shall be made according to any guidance that the Administrator makes available for use.

(2) Owners and operators shall provide documentation demonstrating the hazard or risk equivalency of their proposed emissions average in their operating permit application or in their Implementation Plan if an operating permit application has not yet been submitted.

(3) An emissions averaging plan that does not demonstrate hazard or risk

equivalency to the satisfaction of the Administrator shall not be approved. The Administrator may require such adjustments to the emissions averaging plan as are necessary in order to ensure that the average will not result in greater hazard or risk to human health or the environment than would result if the emission points were controlled according to §§ 63.113 through 63.148 of this subpart.

(4) A hazard or risk equivalency demonstration must:

(i) Be a quantitative, bona fide chemical hazard or risk assessment;

(ii) Account for differences in chemical hazard or risk to human health or the environment; and

(iii) Meet any requirements set by the Administrator for such demonstrations.

(l) For periods of excursions, an owner or operator may request that the provisions of paragraphs (l)(1) through (l)(4) of this section be followed instead of the procedures in paragraphs (f)(3)(i) and (f)(3)(ii) of this section.

(1) The owner or operator shall notify the Administrator of excursions in the Periodic Reports as required in § 63.152 of this subpart.

(2) The owner or operator shall demonstrate that other types of monitoring data or engineering calculations are appropriate to establish that the control device for the emission point was operating in such a fashion to warrant assigning full or partial credits and debits. This demonstration shall be made to the Administrator's satisfaction, and the Administrator may establish procedures of demonstrating compliance that are acceptable.

(3) The owner or operator shall provide documentation of the excursion and the other type of monitoring data or engineering calculations to be used to demonstrate that the control device for the emission point was operating in such a fashion to warrant assigning full or partial credits and debits.

(4) The Administrator may assign full or partial credit and debits upon review of the information provided.

(m) For each Group 1 or Group 2 emission point included in an emissions average, the owner or operator

shall perform testing, monitoring, recordkeeping, and reporting equivalent to that required for Group 1 emission points complying with §§63.113 through 63.148 of this subpart. The specific requirements for process vents, storage vessels, transfer racks, and wastewater are identified in paragraphs (m)(1) through (m)(6) of this section.

(1) The source shall implement the following testing, monitoring, recordkeeping, and reporting procedures for each process vent equipped with a flare, incinerator, boiler, or process heater.

(i) Determine whether the process vent is Group 1 or Group 2 according to the procedures in §63.115 of this subpart.

(ii) Conduct initial performance tests to determine percent reduction as specified in §63.116 of this subpart;

(iii) Monitor the operating parameters, keep records, and submit reports specified in §63.114, §63.117(a), and §63.118 (a), (f), and (g) of this subpart, as appropriate for the specific control device.

(2) The source shall implement the following procedures for each process vent equipped with a carbon adsorber, absorber, or condenser but not equipped with a control device:

(i) Determine the flow rate, organic HAP concentration, and TRE index value using the methods specified in §63.115 of this subpart;

(ii) Monitor the operating parameters, keep records, and submit reports specified in §63.114, §63.117(a), and §63.118(b), (f), and (g) of this subpart, as appropriate for the specific recovery device.

(3) The source shall implement the following procedures for each storage vessel controlled with an internal floating roof, external roof, or a closed vent system with a control device, as appropriate to the control technique:

(i) Perform the monitoring or inspection procedures in §63.120 of this subpart,

(ii) Perform the reporting and recordkeeping procedures in §§63.122 and 63.123 of this subpart, and

(iii) For closed vent systems with control devices, conduct an initial design evaluation and submit an operat-

ing plan as specified in §63.120(d) and §63.122(a)(2) and (b) of this subpart.

(4) The source shall implement the following procedures for each transfer rack controlled with a vapor balancing system, or a vapor collection system and an incinerator, flare, boiler, process heater, adsorber, condenser, or absorber, as appropriate to the control technique:

(i) The monitoring and inspection procedures in §63.127 of this subpart,

(ii) The testing and compliance procedures in §63.128 of this subpart, and

(iii) The reporting and recordkeeping procedures in §63.129 and §63.130 of this subpart.

(5) The source shall implement the following procedures for wastewater emission points, as appropriate to the control techniques:

(i) For wastewater treatment processes, conduct tests as specified in §63.138(i) and (j) of this subpart.

(ii) Conduct inspections and monitoring as specified in §63.143 of this subpart.

(iii) A recordkeeping program as specified in §63.147 of this subpart.

(iv) A reporting program as specified in §63.146 of this subpart.

(6) If an emission point in an emissions average is controlled using a pollution prevention measure or a device or technique for which no monitoring parameters or inspection procedures are specified in §63.114, §63.120, §63.127, or §63.143 of this subpart, the owner or operator shall submit the information specified in §63.151(f) of this subpart in the Implementation Plan or operating permit application.

(n) Records of all information required to calculate emission debits and credits shall be retained for five years.

(o) Initial Notifications, Implementation Plans, Notifications of Compliance Status, Periodic Reports, and other reports shall be submitted as required by §63.151 and §63.152 of this subpart.

[59 FR 19468, Apr. 22, 1994, as amended at 60 FR 63628, Dec. 12, 1995]

**§63.151 Initial notification and implementation plan.**

(a) Each owner or operator of a source subject to this subpart shall submit the reports listed in paragraphs (a)(1) through (a)(5) of this section.

Owners or operators requesting an extension of compliance shall also submit the report listed in paragraph (a)(6) of this section.

(1) An Initial Notification described in paragraph (b) of this section, and

(2) An Implementation Plan, unless an operating permit application has been submitted prior to the date the Implementation Plan is due and the owner or operator has elected to include the information specified in §63.152(e) in that application.

(i) The submittal date and contents of the Implementation Plan for emission points to be included in an emissions average are specified in paragraphs (c) and (d) of this section.

(ii) The submittal date and contents of the Implementation Plan for emission points that will not be included in an emissions average are specified in paragraph (c) and (e) of this section.

(3) A Notification of Compliance Status described in §63.152 of this subpart.

(4) Periodic Reports described in §63.152 of this subpart, and

(5) Other reports described in §63.152 of this subpart.

(6) Pursuant to section 112(i)(3)(B) of the Act, an owner or operator may request an extension allowing the existing source up to 1 additional year to comply with section 112(d) standards.

(i) For purposes of this subpart, a request for an extension shall be submitted to the operating permit authority as part of the operating permit application. If the State in which the source is located does not have an approved operating permit program, a request for an extension shall be submitted to the Administrator as part of the Initial Notification or as a separate submittal. Requests for extensions shall be submitted no later than the date the Implementation Plan is required to be submitted. The dates specified in §63.6(i) of subpart A for submittal of requests for extensions shall not apply to sources subject to subpart G.

(ii) A request for an extension of compliance must include the data described in §63.6(i)(6)(i) (A), (B), and (D) of subpart A of this part.

(iii) The requirements in §63.6(i)(8) through (i)(14) of subpart A will govern the review and approval of requests for

extensions of compliance with this subpart.

(b) Each owner or operator of an existing or new source subject to subpart G shall submit a written Initial Notification to the Administrator, containing the information described in paragraph (b)(1) of this section, according to the schedule in paragraph (b)(2) of this section. The Initial Notification provisions in §63.9(b)(2), (b)(3), and (b)(6) of subpart A shall not apply to owners or operators of sources subject to subpart G.

(1) The Initial Notification shall include the following information:

(i) The name and address of the owner or operator;

(ii) The address (physical location) of the affected source;

(iii) An identification of the kinds of emission points within the chemical manufacturing process units that are subject to subpart G;

(iv) An identification of the chemical manufacturing processes subject to subpart G; and

(v) A statement of whether the source can achieve compliance by the relevant compliance date specified in §63.100 of subpart F.

(2) The Initial Notification shall be submitted according to the schedule in paragraph (b)(2)(i), (b)(2)(ii), or (b)(2)(iii) of this section, as applicable.

(i) For an existing source, the Initial Notification shall be submitted within 120 calendar days after the date of promulgation.

(ii) For a new source that has an initial start-up 90 calendar days after the date of promulgation of this subpart or later, the application for approval of construction or reconstruction required by §63.5(d) of subpart A shall be submitted in lieu of the Initial Notification. The application shall be submitted as soon as practicable before construction or reconstruction is planned to commence (but it need not be sooner than 90 calendar days after the date of promulgation of this subpart).

(iii) For a new source that has an initial start-up prior to 90 calendar days after the date of promulgation, the Initial Notification shall be submitted within 90 calendar days after the date of promulgation of this subpart. The

application for approval of construction or reconstruction described in § 63.5(d) of subpart A is not required for these sources.

(c) Each owner or operator of an existing or new source subject to this subpart must submit an Implementation Plan to the Administrator by the dates specified in paragraphs (c)(1) and (c)(2) of this section unless an operating permit application accompanied by the information specified in § 63.152(e) has been submitted. The Implementation Plan for emissions averaging is subject to Administrator approval.

(1) For existing sources, an Implementation Plan shall be submitted as specified in paragraphs (c)(1)(i) and (c)(1)(ii) of this section.

(i) Each owner or operator of an existing source subject to this subpart who elects to comply with § 63.112 by using emissions averaging for any emission points, and who has not submitted an operating permit application accompanied by the information specified in § 63.152(e) at least 18 months prior to the compliance dates specified in § 63.100 of subpart F of this part, shall develop an Implementation Plan for emissions averaging. For existing sources, the Implementation Plan for those emission points to be included in an emissions average shall be submitted no later than 18 months prior to the compliance dates in § 63.100 of subpart F.

(ii) Each owner or operator of an existing source subject to this subpart who elects to comply with § 63.112 of this subpart by complying with the provisions of §§ 63.113 to 63.148 of this subpart, rather than emissions averaging, for any emission points, and who has not submitted an operating permit application accompanied by the information specified in § 63.152(e) by December 31, 1996, shall develop an Implementation Plan. For an existing source, the Implementation Plan for those emission points that are not to be included in an emissions average shall be submitted to the Administrator no later than December 31, 1996.

(2) Each owner or operator of a new source shall submit an Implementation Plan by the date specified in paragraphs (c)(2)(i) or (c)(2)(ii) of this section, as applicable, unless an operating

permit application containing the information in paragraph (e) of this section has been submitted by that date.

(i) For a new source that has an initial start-up 90 calendar days after the date of promulgation of this subpart or later, the Implementation Plan shall be submitted with the application for approval of construction or reconstruction by the date specified in paragraph (b)(2)(ii) of this section.

(ii) For a new source that has an initial start-up prior to 90 calendar days after the date of promulgation, the Implementation Plan shall be submitted within 90 calendar days after the date of promulgation of this subpart.

(3) The Administrator shall determine within 120 calendar days whether the Implementation Plan submitted by sources using emissions averaging presents sufficient information. The Administrator shall either approve the Implementation Plan, request changes, or request that the owner or operator submit additional information. Once the Administrator receives sufficient information, the Administrator shall approve, disapprove, or request changes to the plan within 120 calendar days.

(d) Each owner or operator required to submit an Implementation Plan for emissions averaging shall include in the plan, for all emission points included in the emissions average, the information listed in paragraphs (d)(1) through (d)(8) of this section.

(1) The identification of all emission points in the planned emissions average and notation of whether each point is a Group 1 or Group 2 emission point as defined in § 63.111 of this subpart.

(2) The projected emission debits and credits for each emission point and the sum for the emission points involved in the average calculated according to § 63.150 of this subpart. The projected credits must be greater than the projected debits, as required under § 63.150(e)(3) of this subpart.

(3) The specific control technology or pollution prevention measure that will be used for each emission point included in the average and date of application or expected date of application.

(4) The specific identification of each emission point affected by a pollution prevention measure. To be considered a

pollution prevention measure, the criteria in §63.150(j)(1) of this subpart must be met. If the same pollution prevention measure reduces or eliminates emissions from multiple emission points in the average, the owner or operator must identify each of these emission points.

(5) A statement that the compliance demonstration, monitoring, inspection, recordkeeping, and reporting provisions in §63.150(m), (n), and (o) of this subpart that are applicable to each emission point in the emissions average will be implemented beginning on the date of compliance.

(6) Documentation of the information listed in paragraph (d)(6)(i) through (d)(6)(v) of this section for each process vent, storage vessel, or transfer rack included in the average.

(i) The values of the parameters used to determine whether the emission point is Group 1 or Group 2. Where TRE index value is used for process vent group determination, the estimated or measured values of the parameters used in the TRE equation in §63.115(d) of this subpart (flow rate, organic HAP emission rate, TOC emission rate, and net heating value) and the resulting TRE index value shall be submitted.

(ii) The estimated values of all parameters needed for input to the emission debit and credit calculations in §63.150 (g) and (h) of this subpart. These parameter values, or as appropriate, limited ranges for the parameter values, shall be specified in the source's Implementation Plan (or operating permit) as enforceable operating conditions. Changes to these parameters must be reported as required by paragraph (i)(2)(ii) of this section.

(iii) The estimated percent reduction if a control technology achieving a lower percent reduction than the efficiency of the reference control technology, as defined in §63.111 of this subpart, is or will be applied to the emission point.

(iv) The anticipated nominal efficiency if a control technology achieving a greater percent emission reduction than the efficiency of the reference control technology is or will be applied to the emission point. The procedures in §63.150(i) of this subpart

shall be followed to apply for a nominal efficiency.

(v) The operating plan required in §63.122(a)(2) and (b) of this subpart for each storage vessel controlled with a closed-vent system with a control device other than a flare.

(7) The information specified in §63.151(f) of this subpart shall be included in the Implementation Plan for:

(i) Each process vent or transfer rack controlled by a pollution prevention measure or control technique for which monitoring parameters or inspection procedures are not specified in §63.114, §63.126(b)(3), or §63.127 of this subpart, and

(ii) Each storage vessel controlled by pollution prevention or a control technique other than an internal or external floating roof or a closed vent system with a control device.

(8) Documentation of the information listed in paragraph (d)(8)(i) through (d)(8)(iv) for each process wastewater stream included in the average.

(i) The information used to determine whether the wastewater stream is a Group 1 or Group 2 wastewater stream. This shall include the information specified in table 14a for wastewater streams at new sources and in table 14b for wastewater streams at new and existing sources.

(ii) The estimated values of all parameters needed for input to the wastewater emission credit and debit calculations in §63.150 (g)(5) and (h)(5) of this subpart.

(iii) The estimated percent reduction if:

(A) A control technology that achieves an emission reduction less than or equal to the emission reduction achieved by the design steam stripper, as specified in §63.138(g) of this subpart, is or will be applied to the wastewater stream, or

(B) A control technology achieving less than or equal to 95 percent emission reduction is or will be applied to the vapor stream(s) vented and collected from the treatment processes, or

(C) A pollution prevention measure is or will be applied.

(iv) The anticipated nominal efficiency if the owner or operator plans to apply for a nominal efficiency under

§ 63.150(i) of this subpart. A nominal efficiency shall be applied for if:

(A) A control technology is or will be applied to the wastewater stream and achieves an emission reduction greater than the emission reduction achieved by the design steam stripper as specified in § 63.138(g) of this subpart, or

(B) A control technology achieving greater than 95 percent emission reduction is or will be applied to the vapor stream(s) vented and collected from the treatment processes.

(v) For each pollution prevention measure, treatment process, or control device used to reduce air emissions of organic HAP's from wastewater and for which no monitoring parameters or inspection procedures are specified in § 63.143 of this subpart, the information specified in § 63.151(f) of this subpart shall be included in the Implementation Plan.

(e) An owner or operator required to submit an Implementation Plan shall include in the Implementation Plan the information listed in paragraphs (e)(1) through (e)(5) of this section for emission points that are not included in an emissions average.

(1) A list designating each emission point complying with §§ 63.113 through 63.148 of this subpart.

(i) Whether each emission point is Group 1 or Group 2, as defined in § 63.111 of this subpart.

(ii) For process wastewater, the information specified in table 14a for wastewater streams at new sources and in table 14b for wastewater streams at new and existing sources.

(2) The control technology or method of compliance that will be applied to each Group 1 emission point.

(3) A statement that the compliance demonstration, monitoring, inspection, recordkeeping, and reporting provisions in §§ 63.113 through 63.148 of this subpart that are applicable to each emission point will be implemented beginning on the date of compliance.

(4) The operating plan required in § 63.122(a)(2) and (b) of this subpart for each storage vessel controlled with a closed vent system with a control device other than a flare.

(5) The monitoring information in § 63.151(f) of this subpart if, for any emission point, the owner or operator

of a source seeks to comply through use of a control technique other than those for which monitoring parameters are specified in § 63.114 for process vents, § 63.127 for transfer, and § 63.143 for process wastewater.

(f) The owner or operator who has been directed by any section of this subpart to set unique monitoring parameters or who requests approval to monitor a different parameter than those listed in § 63.114 for process vents, § 63.127 for transfer, or § 63.143 for process wastewater shall submit the information specified in paragraphs (f)(1), (f)(2), and (f)(3) of this section with the Implementation Plan required in paragraphs (c), (d), and (e) of this section. An owner or operator who submits an operating permit application instead of an Implementation Plan shall submit the information specified in § 63.152(e) with the operating permit application.

(1) A description of the parameter(s) to be monitored to ensure the control technology or pollution prevention measure is operated in conformance with its design and achieves the specified emission limit, percent reduction, or nominal efficiency, and an explanation of the criteria used to select the parameter(s).

(2) A description of the methods and procedures that will be used to demonstrate that the parameter indicates proper operation of the control device, the schedule for this demonstration, and a statement that the owner or operator will establish a range for the monitored parameter as part of the Notification of Compliance Status report required in § 63.152(b) of this subpart, unless this information has already been included in the operating permit application.

(3) The frequency and content of monitoring, recording, and reporting if monitoring and recording is not continuous, or if reports of daily average values when the monitored parameter value is outside the range established in the operating permit or Notification of Compliance Status will not be included in Periodic Reports required under § 63.152(c) of this subpart. The rationale for the proposed monitoring, recording, and reporting system shall be included.

(g) An owner or operator may request approval to use alternatives to the continuous operating parameter monitoring and recordkeeping provisions listed in §§ 63.114, 63.117, and 63.118 for process vents, §§ 63.127, 63.129, and 63.130 for transfer operations, and §§ 63.143, 63.146, and 63.147 for wastewater.

(1) Requests shall be submitted in the Implementation Plan, if not already included in the operating permit application, and shall contain the information specified in paragraphs (g)(3) through (g)(5) of this section, as applicable.

(2) The provisions in § 63.8(f)(5)(i) of subpart A shall govern the review and approval of requests.

(3) An owner or operator of a source that does not have an automated monitoring and recording system capable of measuring parameter values at least once every 15 minutes and generating continuous records may request approval to use a non-automated system with less frequent monitoring.

(i) The requested system shall include manual reading and recording of the value of the relevant operating parameter no less frequently than once per hour. Daily average values shall be calculated from these hourly values and recorded.

(ii) The request shall contain:

(A) A description of the planned monitoring and recordkeeping system;

(B) Documentation that the source does not have an automated monitoring and recording system;

(C) Justification for requesting an alternative monitoring and recordkeeping system; and

(D) Demonstration to the Administrator's satisfaction that the proposed monitoring frequency is sufficient to represent control device operating conditions considering typical variability of the specific process and control device operating parameter being monitored.

(4) An owner or operator may request approval to use an automated data compression recording system that does not record monitored operating parameter values at a set frequency (for example once every 15 minutes) but records all values that meet set criteria for variation from previously recorded values.

(i) The requested system shall be designed to:

(A) Measure the operating parameter value at least once every 15 minutes.

(B) Record at least four values each hour during periods of operation.

(C) Record the date and time when monitors are turned off or on.

(D) Recognize unchanging data that may indicate the monitor is not functioning properly, alert the operator, and record the incident.

(E) Compute daily average values of the monitored operating parameter based on recorded data.

(F) If the daily average is not an excursion, as defined in § 63.152(c)(2)(ii), the data for that operating day may be converted to hourly average values and the four or more individual records for each hour in the operating day may be discarded.

(ii) The request shall contain a description of the monitoring system and data compression recording system, including the criteria used to determine which monitored values are recorded and retained, the method for calculating daily averages, and a demonstration that the system meets all criteria in paragraph (g)(4)(i) of this section.

(5) An owner or operator may request approval to use other alternative monitoring systems according to the procedures specified in § 63.8(f) of subpart A of this part.

(h) The owner or operator required to prepare an Implementation Plan under paragraph (c), (d), or (e) of this section shall also prepare a supplement to the Implementation Plan for any alternative controls or operating scenarios that may be used to achieve compliance.

(i) The owner or operator of a source required to submit an Implementation Plan for emissions averaging under paragraphs (c) and (d) of this section shall also submit written updates of the Implementation Plan to the Administrator for approval under the circumstances described in paragraphs (i)(1) and (i)(2) of this section unless the relevant information has been included and submitted in an operating permit application or amendment.

(1) The owner or operator who plans to make a change listed in paragraph (i)(1)(i) or (i)(1)(ii) of this section shall

submit an Implementation Plan update at least 120 calendar days prior to making the change.

(i) Whenever an owner or operator elects to achieve compliance with the emissions averaging provisions in § 63.150 of this subpart by using a control technique other than that specified in the Implementation Plan or plans to monitor a different parameter or operate a control device in a manner other than that specified in the Implementation Plan.

(ii) Whenever an emission point or a chemical manufacturing process unit is added to an existing source and is planned to be included in an emissions average, or whenever an emission point not included in the emissions average described in the Implementation Plan is to be added to an emissions average. The information in paragraph (d) of this section shall be updated to include the additional emission point.

(2) The owner or operator who has made a change listed in paragraph (i)(2)(i) or (i)(2)(ii) of this section shall submit an Implementation Plan update within 90 calendar days after the information regarding the change is known to the source. The update may be submitted in the next quarterly Periodic Report if the change is made after the date the Notification of Compliance status is due.

(i) Whenever a process change is made such that the group status of any emission point in an emissions average changes.

(ii) Whenever a value of a parameter in the emission credit or debit equations in § 63.150(g) or (h) changes such that it is outside the range specified in the Implementation Plan and causes a decrease in the projected credits or an increase in the projected debits.

(3) The Administrator shall approve or request changes to the Implementation Plan update within 120 calendar days of receipt of sufficient information regarding the change for emission points included in emissions averages.

(j) The owner or operator of a source required to submit an Implementation Plan under paragraphs (c) and (e) of this section, for emission points that are not included in an emissions average, shall also submit written updates of the Implementation Plan to the Ad-

ministrator under the circumstances described in paragraphs (j)(1), (j)(2), and (j)(3) of this section unless the relevant information has been included and submitted in an operating permit application or amendment. The information shall be submitted within 180 calendar days after the change is made or the information regarding the change is known to the source. The update may be submitted in the next Periodic Report if the change is made after the date the Notification of Compliance status is due.

(1) Whenever a process change is made such that the group status of any emission point changes. The information submitted shall include a compliance schedule as specified in § 63.100 of subpart F if the emission point becomes Group 1.

(2) Whenever an owner or operator elects to achieve compliance with this subpart by using a control technique other than that specified in the Implementation Plan or plans to monitor a different parameter or operate a control device in a manner other than that specified in the Implementation Plan.

(3) Whenever an emission point or a chemical manufacturing process unit is added to a source, a written addendum to the Implementation Plan containing information in paragraph (e) of this section on the new emission point shall be submitted.

[59 FR 19468, Apr. 22, 1994, as amended at 60 FR 63628, Dec. 12, 1995; 61 FR 7718, Feb. 29, 1996]

#### **§ 63.152 General reporting and continuous records.**

(a) The owner or operator of a source subject to this subpart shall submit the reports listed in paragraphs (a)(1) through (a)(5) of this section and keep continuous records of monitored parameters as specified in paragraph (f) of this section. Owners or operators requesting an extension of compliance shall also submit the report described in § 63.151(a)(6) of this subpart.

(1) An Initial Notification described in § 63.151(b) of this subpart.

(2) An Implementation Plan described in § 63.151 (c), (d), and (e) of this subpart, unless an operating permit application has been submitted prior to

the date the Implementation Plan is due.

(3) A Notification of Compliance Status described in paragraph (b) of this section.

(4) Periodic Reports described in paragraph (c) of this section.

(5) Other reports described in paragraphs (d) and (e) of this section.

(b) Each owner or operator of a source subject to this subpart shall submit a Notification of Compliance Status within 150 calendar days after the compliance dates specified in § 63.100 of subpart F of this part.

(1) The notification shall include the results of any emission point group determinations, performance tests, inspections, continuous monitoring system performance evaluations, values of monitored parameters established during performance tests, and any other information used to demonstrate compliance or required to be included in the Notification of Compliance Status under § 63.117 for process vents, § 63.122 for storage vessels, § 63.129 for transfer operations, § 63.146 for process wastewater, and § 63.150 for emission points included in an emissions average.

(i) For performance tests and group determinations that are based on measurements, the Notification of Compliance Status shall include one complete test report for each test method used for a particular kind of emission point. For additional tests performed for the same kind of emission point using the same method, the results and any other information required in § 63.117 for process vents, § 63.129 for transfer, and § 63.146 for process wastewater shall be submitted, but a complete test report is not required.

(ii) A complete test report shall include a brief process description, sampling site description, description of sampling and analysis procedures and any modifications to standard procedures, quality assurance procedures, record of operating conditions during the test, record of preparation of standards, record of calibrations, raw data sheets for field sampling, raw data sheets for field and laboratory analyses, documentation of calculations, and any other information required by the test method.

(2) For each monitored parameter for which a range is required to be established under § 63.114 for process vents, § 63.120(d) for storage, § 63.127 for transfer, § 63.143 for process wastewater, § 63.150(m) for emission points in emissions averages, or § 63.151(f), or § 63.152(e) of this subpart, the Notification of Compliance Status shall include the information in paragraphs (b)(2)(i), (b)(2)(ii), and (b)(2)(iii) of this section, unless the range and the operating day definition have been established in the operating permit.

(i) The specific range of the monitored parameter(s) for each emission point;

(ii) The rationale for the specific range for each parameter for each emission point, including any data and calculations used to develop the range and a description of why the range indicates proper operation of the control device.

(A) If a performance test is required by this subpart for a control device, the range shall be based on the parameter values measured during the performance test supplemented by engineering assessments and manufacturer's recommendations. Performance testing is not required to be conducted over the entire range of permitted parameter values.

(B) If a performance test is not required by this subpart for a control device, the range may be based solely on engineering assessments and manufacturer's recommendations.

(iii) A definition of the source's operating day for purposes of determining daily average values of monitored parameters. The definition shall specify the times at which an operating day begins and ends.

(3) For emission points included in an emissions average, the Notification of Compliance Status shall include the values of all parameters needed for input to the emission credit and debit equations in § 63.150 (g) and (h), calculated or measured according to the procedures in § 63.150 (g) and (h) of this subpart, and the resulting calculation of credits and debits for the first quarter of the year. The first quarter begins on the compliance date specified in § 63.100 of subpart F.

(4) If any emission point is subject to this subpart and to other standards as specified in §63.110 of this subpart and if the provisions of §63.110 of this subpart allow the owner or operator to choose which testing, monitoring, reporting, and recordkeeping provisions will be followed, then the Notification of Compliance Status shall indicate which rule's requirements will be followed for testing, monitoring, reporting, and recordkeeping.

(c) The owner or operator of a source subject to this subpart shall submit Periodic Reports.

(1) Except as specified under paragraphs (c)(5) and (c)(6) of this section, a report containing the information in paragraphs (c)(2), (c)(3), and (c)(4) of this section shall be submitted semi-annually no later than 60 calendar days after the end of each 6-month period. The first report shall be submitted no later than 8 months after the date the Notification of Compliance Status is due and shall cover the 6-month period beginning on the date the Notification of Compliance Status is due.

(2) For an owner or operator of a source complying with the provisions of §§63.113 through 63.147 of this subpart for any emission points, Periodic Reports shall include all information specified in §§63.117 and 63.118 for process vents, §63.122 for storage vessels, §§63.129 and 63.130 for transfer operations, and §63.146 for process wastewater, including reports of periods when monitored parameters are outside their established ranges.

(i) For each parameter or parameters required to be monitored for a control device, the owner or operator shall establish a range of parameter values to ensure that the device is being applied, operated and maintained properly. As specified in paragraph (b)(2) of this section, these parameter values and the definition of an operating day shall be approved as part of and incorporated into the source's Notification of Compliance Status or operating permit, as appropriate.

(ii) The parameter monitoring data for Group 1 emission points and emission points included in emissions averages that are required to perform continuous monitoring shall be used to determine compliance with the required

operating conditions for the monitored control devices. For each excursion, except for excused excursions, the owner or operator shall be deemed to have failed to have applied the control in a manner that achieves the required operating conditions.

(A) An excursion means any of the three cases listed in paragraphs (c)(2)(ii)(A)(1), (c)(2)(ii)(A)(2), or (c)(2)(ii)(A)(3) of this section. For a control device where multiple parameters are monitored, if one or more of the parameters meets the excursion criteria in paragraphs (c)(2)(ii)(A)(1), (c)(2)(ii)(A)(2), or (c)(2)(ii)(A)(3), this is considered a single excursion for the control device.

(1) When the daily average value of one or more monitored parameters is outside the permitted range.

(2) When the period of control device operation is 4 hours or greater in an operating day and monitoring data are insufficient to constitute a valid hour of data for at least 75 percent of the operating hours.

(3) When the period of control device operation is less than 4 hours in an operating day and more than one of the hours during the period of operation does not constitute a valid hour of data due to insufficient monitoring data.

(4) Monitoring data are insufficient to constitute a valid hour of data, as used in paragraphs (c)(2)(ii)(A)(2) and (c)(2)(ii)(A)(3) of this section, if measured values are unavailable for any of the 15-minute periods within the hour. For data compression systems approved under §63.151(g)(4), monitoring data are insufficient to calculate a valid hour of data if there are less than 4 data values recorded during the hour.

(B) The number of excused excursions for each control device for each semi-annual period is specified in paragraphs (c)(2)(ii)(B)(1) through (c)(2)(ii)(B)(6) of this section. This paragraph applies to sources required to submit Periodic Reports semiannually or quarterly. The first semiannual period is the 6-month period starting the date the Notification of Compliance Status is due.

(1) For the first semiannual period—six excused excursions.

(2) For the second semiannual period—five excused excursions.

(3) For the third semiannual period—four excused excursions.

(4) For the fourth semiannual period—three excused excursions.

(5) For the fifth semiannual period—two excused excursions.

(6) For the sixth and all subsequent semiannual periods—one excused excursion.

(C) If a monitored parameter is outside its established range or monitoring data are not collected during start-up, shutdown, or malfunction, and the source is operated during such periods in accordance with the source's start-up, shutdown, and malfunction plan as required by § 63.6(e)(3) of subpart A, then the monitoring parameter excursion does not count toward the number of excused excursions for determining compliance and is not a violation.

(D) Nothing in paragraph (c)(2)(ii) of this section shall be construed to allow or excuse a monitoring parameter excursion caused by any activity that violates other applicable provisions of subpart A, F, or G of this part.

(E) Paragraph (c)(2)(ii) of this section shall apply only to emission points and control devices for which continuous monitoring is required by §§ 63.113 through 63.150 of this subpart.

(iii) Periodic Reports shall include the daily average values of monitored parameters for both excused and unexcused excursions, as defined in paragraph (c)(2)(ii)(A) of this section. For excursions caused by lack of monitoring data, the duration of periods when monitoring data were not collected shall be specified.

(3) If any performance tests are reported in a Periodic Report, the following information shall be included:

(i) One complete test report shall be submitted for each test method used for a particular kind of emission point tested. A complete test report shall contain the information specified in paragraph (b)(1)(ii) of this section.

(ii) For additional tests performed for the same kind of emission point using the same method, results and any other information required in § 63.117 for process vents, § 63.129 for transfer, and § 63.146 for process wastewater shall be submitted, but a complete test report is not required.

(4) Periodic Reports shall include the information in paragraphs (c)(4)(i) through (c)(4)(iii) of this section, as applicable:

(i) For process vents, reports of process changes as required under § 63.118 (g), (h), (i), and (j) of this subpart.

(ii) Any supplements to the Implementation Plan required under § 63.151 (i) and (j) of this subpart.

(iii) Notification if any Group 2 emission point becomes a Group 1 emission point, including a compliance schedule as required in § 63.100 of subpart F.

(5) The owner or operator of a source shall submit quarterly reports for all emission points included in an emissions average.

(i) The quarterly reports shall be submitted no later than 60 calendar days after the end of each quarter. The first report shall be submitted with the Notification of Compliance Status no later than 5 months after the compliance date specified in § 63.100 of subpart F.

(ii) The quarterly reports shall include the information specified in this paragraph for all emission points included in an emissions average.

(A) The credits and debits calculated each month during the quarter;

(B) A demonstration that debits calculated for the quarter are not more than 1.30 times the credits calculated for the quarter, as required under § 63.150(e)(4) of this subpart.

(C) The values of any inputs to the credit and debit equations in § 63.150 (g) and (h) of this subpart that change from month to month during the quarter or that have changed since the previous quarter;

(D) Results of any performance tests conducted during the reporting period including one complete report for each test method used for a particular kind of emission point as described in paragraph (c)(3) of this section;

(E) Reports of daily average values of monitored parameters for both excused and unexcused excursions as defined in paragraph (c)(2)(ii)(A) of this section. For excursions caused by lack of monitoring data, the duration of periods when monitoring data were not collected shall be specified.

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(F) Any other information the source is required to report under the operating permit or Implementation Plan for the source.

(iii) Paragraphs (c)(2)(i) through (c)(2)(iii) of this section shall govern the use of monitoring data to determine compliance for Group 1 and Group 2 points included in emissions averages.

(iv) Every fourth quarterly report shall include the following:

(A) A demonstration that annual credits are greater than or equal to annual debits as required by § 63.150(e)(3) of this subpart; and

(B) A certification of compliance with all the emissions averaging provisions in § 63.150 of this subpart.

(6) The owner or operator of a source shall submit reports quarterly for particular emission points not included in an emissions average under the circumstances described in paragraphs (c)(6)(i) through (c)(6)(v) of this section.

(i) The owner or operator of a source subject to this subpart shall submit quarterly reports for a period of one year for an emission point that is not included in an emissions average if:

(A) The emission point has more excursions, as defined in paragraph (c)(2)(ii) of this section, than the number of excused excursions allowed under paragraph (c)(2)(ii)(B) of this section for a semiannual reporting period; and

(B) The Administrator requests the owner or operator to submit quarterly reports for the emission point.

(ii) The quarterly reports shall include all information in paragraphs (c)(2), (c)(3), and (c)(4) of this section applicable to the emission point(s) for which quarterly reporting is required under paragraph (c)(6)(i) of this section. Information applicable to other emission points within the source shall be submitted in the semiannual reports required under paragraph (c)(1) of this section.

(iii) Quarterly reports shall be submitted no later than 60 calendar days after the end of each quarter.

(iv) After quarterly reports have been submitted for an emission point for one year, the owner or operator may return to semiannual reporting for the emission point unless the Administrator re-

quests the owner or operator to continue to submit quarterly reports.

(v) Paragraphs (c)(2)(i) through (c)(2)(iii) of this section shall govern the use of monitoring data to determine compliance for Group 1 emission points.

(d) Other reports shall be submitted as specified in subpart A of this part or in §§ 63.113 through 63.151 of this subpart. These reports are:

(1) Reports of start-up, shutdown, and malfunction required by § 63.10(d)(5) of subpart A. The semi-annual start-up, shutdown and malfunction reports may be submitted on the same schedule as the Periodic Reports required under paragraph (c) of this section instead of the schedule specified in § 63.10(d)(5)(i) of subpart A.

(2) For storage vessels, the notifications of inspections required by § 63.122(h)(1) and (h)(2) of this subpart.

(3) For owners or operators of sources required to request approval for a nominal control efficiency for use in calculating credits for an emissions average, the information specified in § 63.150(i) of this subpart.

(e) An owner or operator who submits an operating permit application instead of an Implementation Plan shall submit the following information with the operating permit application:

(1) The information specified in § 63.151 (f) or (g) of this subpart for any emission points for which the owner or operator requests approval to monitor a unique parameter or use an alternative monitoring and recording system, and

(2) The information specified in § 63.151(d) of this subpart for points included in an emissions average.

(3) The information specified in § 63.151(e) of this subpart for points not included in an emissions average.

(4) The information specified in § 63.151(h) as applicable.

(f) Owners or operators required to keep continuous records by §§ 63.118, 63.130, 63.147, 63.150, or other sections of this subpart shall keep records as specified in paragraphs (f)(1) through (f)(7) of this section, unless an alternative recordkeeping system has been requested and approved under § 63.151 (f) or (g) or § 63.152(e) of this subpart or under § 63.8(f) of subpart A of this part.

(1) The monitoring system shall measure data values at least once every 15 minutes.

(2) The owner or operator shall record either:

(i) Each measured data value; or

(ii) Block average values for 15-minute or shorter periods calculated from all measured data values during each period.

(3) If the daily average value of a monitored parameter for a given operating day is within the range established in the Notification of Compliance Status or operating permit, the owner or operator shall either:

(i) Retain block hourly average values for that operating day for 5 years and discard, at or after the end of that operating day, the 15-minute or more frequent average values and readings recorded under paragraph (f)(2) of this section; or

(ii) Retain the data recorded in paragraph (f)(2) of this section for 5 years.

(4) If the daily average value of a monitored parameter for a given operating day is outside the range established in the Notification of Compliance Status or operating permit, the owner or operator shall retain the data recorded that operating day under paragraph (f)(2) of this section for 5 years.

(5) Daily average values of each continuously monitored parameter shall be calculated for each operating day, and retained for 5 years, except as specified in paragraph (f)(6) of this section.

(i) The daily average shall be calculated as the average of all values for

a monitored parameter recorded during the operating day. The average shall cover a 24-hour period if operation is continuous, or the number of hours of operation per operating day if operation is not continuous.

(ii) The operating day shall be the period defined in the operating permit or the Notification of Compliance Status. It may be from midnight to midnight or another daily period.

(6) If all recorded values for a monitored parameter during an operating day are within the range established in the Notification of Compliance Status or operating permit, the owner or operator may record that all values were within the range and retain this record for 5 years rather than calculating and recording a daily average for that operating day. For these operating days, the records required in paragraph (f)(3) of this section shall also be retained for 5 years.

(7) Monitoring data recorded during periods of monitoring system breakdowns, repairs, calibration checks, and zero (low-level) and high-level adjustments shall not be included in any average computed under this subpart. Records shall be kept of the times and durations of all such periods and any other periods during process or control device operation when monitors are not operating.

[59 FR 19468, Apr. 22, 1994, as amended at 60 FR 63629, Dec. 12, 1995]

APPENDIX TO SUBPART G—TABLES AND FIGURES

TABLE 1.—PROCESS VENTS—COEFFICIENTS FOR TOTAL RESOURCE EFFECTIVENESS FOR EXISTING SOURCE NONHALOGENATED AND HALOGENATED VENT STREAMS

| Type of Stream | Control Device Basis                         | Values of Coefficients |                        |                         |                         |
|----------------|--|------------------------|------------------------|-------------------------|-------------------------|
|                |  | a                      | b                      | c                       | d                       |
| Nonhalogenated | Flare  | 1.935                  | $3.660 \times 10^{-1}$ | $-7.687 \times 10^{-3}$ | $-7.333 \times 10^{-4}$ |
|                | Thermal Incinerator 0 Percent Heat Recovery  | 1.492                  | $6.267 \times 10^{-2}$ | $3.177 \times 10^{-2}$  | $-1.159 \times 10^{-3}$ |
|                | Thermal Incinerator 70 Percent Heat Recovery | 2.519                  | $1.183 \times 10^{-2}$ | $1.300 \times 10^{-2}$  | $4.790 \times 10^{-2}$  |
|                | Thermal Incinerator and Scrubber             | 3.995                  | $5.200 \times 10^{-2}$ | $-1.769 \times 10^{-3}$ | $9.700 \times 10^{-4}$  |
| Halogenated    |  |                        |                        |                         |                         |

TABLE 2.—PROCESS VENTS—COEFFICIENTS FOR TOTAL RESOURCE EFFECTIVENESS FOR NEW SOURCE NONHALOGENATED AND HALOGENATED VENT STREAMS

| Type of stream | Control device basis                         | Values of Coefficients |                        |                         |                         |
|----------------|--|------------------------|------------------------|-------------------------|-------------------------|
|                |  | a                      | b                      | c                       | d                       |
| Nonhalogenated | Flare  | 0.5276                 | 0.0998                 | $-2.096 \times 10^{-3}$ | $-2.000 \times 10^{-4}$ |
|                | Thermal Incinerator 0 Percent Heat Recovery  | 0.4068                 | 0.0171                 | $8.664 \times 10^{-3}$  | $-3.162 \times 10^{-4}$ |
|                | Thermal Incinerator 70 Percent Heat Recovery | 0.6868                 | $3.209 \times 10^{-3}$ | $3.546 \times 10^{-3}$  | $1.306 \times 10^{-2}$  |
|                | Thermal Incinerator and Scrubber             | 1.0895                 | $1.417 \times 10^{-2}$ | $-4.822 \times 10^{-4}$ | $2.645 \times 10^{-4}$  |
| Halogenated    |  |                        |                        |                         |                         |

TABLE 3.—PROCESS VENTS—MONITORING, RECORDKEEPING, AND REPORTING REQUIREMENTS FOR COMPLYING WITH 98 WEIGHT-PERCENT REDUCTION OF TOTAL ORGANIC HAP EMISSIONS OR A LIMIT OF 20 PARTS PER MILLION BY VOLUME

| Control device  | Parameters to be monitored <sup>a</sup>  | Recordkeeping and reporting requirements for monitored parameters  |
|---|--|--|
| Thermal Incinerator .....   | Firebox temperature <sup>b</sup> [63.114(a)(1)(i)].  | <ol style="list-style-type: none"> <li>1. Continuous records<sup>c</sup>.</li> <li>2. Record and report the firebox temperature averaged over the full period of the performance test NCS<sup>d</sup>.</li> <li>3. Record the daily average firebox temperature for each operating day<sup>e</sup>.</li> <li>4. Report all daily average temperatures that are outside the range established in the NCS or operating permit and all operating days when insufficient monitoring data are collected<sup>f</sup>—PR<sup>g</sup>.</li> </ol>  |
| Catalytic Incinerator .....   | Temperature upstream and downstream of the catalyst bed [63.114(a)(1)(ii)].                    | <ol style="list-style-type: none"> <li>1. Continuous records</li> <li>2. Record and report the upstream and downstream temperatures and the temperature difference across the catalyst bed averaged over the full period of the performance test—NCS.</li> <li>3. Record the daily average upstream temperature and temperature difference across catalyst bed for each operating day<sup>e</sup>.</li> <li>4. Report all daily average upstream temperatures that are outside the range established in the NCS or operating permit—PR.</li> <li>5. Report all daily average temperature differences across the catalyst bed that are outside the range established in the NCS or operating permit—PR.</li> <li>6. Report all operating days when insufficient monitoring data are collected<sup>f</sup>.</li> </ol> |
| Boiler or Process Heater with a design heat input capacity less than 44 megawatts and Vent Stream is <i>not</i> introduced with or as the primary fuel. | Firebox temperature <sup>b</sup> . [63.114(a)(3)].   | <ol style="list-style-type: none"> <li>1. Continuous records.</li> <li>2. Record and report the firebox temperature averaged over the full period of the performance test—NCS</li> <li>3. Record the daily average firebox temperature for each operating day<sup>e</sup>.</li> <li>4. Report all daily average firebox temperatures that are outside the range established in the NCS or operating permit and all operating days when insufficient monitoring data are collected<sup>f</sup>—PR.</li> </ol>   |
| Flare .....   | Presence of a flame at the pilot light [63.114(a)(2)].   | <ol style="list-style-type: none"> <li>1. Hourly records of whether the monitor was continuously operating and whether the pilot flame was continuously present during each hour.</li> <li>2. Record and report the presence of a flame at the pilot light over the full period of the compliance determination—NCS.</li> <li>3. Record the times and durations of all periods when a pilot flame is absent or the monitor is not operating.</li> <li>4. Report the times and durations of all periods when all pilot flames of a flare are absent—PR</li> </ol>   |
| Scrubber for Halogenated Vent Streams (Note: Controlled by a combustion device other than a flare).   | pH of scrubber effluent [63.114(a)(4)(i)], and.  | <ol style="list-style-type: none"> <li>1. Continuous records.</li> <li>2. Record and report the pH of the scrubber effluent averaged over the full period of the performance test—NCS.</li> <li>3. Record the daily average pH of the scrubber effluent for each operating day<sup>e</sup>.</li> <li>4. Report all daily average pH values of the scrubber effluent that are outside the range established in the NCS or operating permit and all operating days when insufficient monitoring data are collected<sup>f</sup>—PR.</li> </ol>  |
| Scrubber for Halogenated Vent Streams (Note: Controlled by a combustion device other than a flare) (Continued).   | Scrubber liquid and gas flow rates [63.114(a)(4)(ii)].   | <ol style="list-style-type: none"> <li>1. Continuous records.</li> <li>2. Record and report the scrubber liquid/gas ratio averaged over the full period of the performance test—NCS.</li> <li>3. Record the daily average scrubber liquid/gas ratio for each operating day<sup>e</sup>.</li> <li>4. Report all daily average scrubber liquid/gas ratios that are outside the range established in the NCS or operating permit and all operating days when insufficient monitoring data are collected<sup>f</sup>—PR.</li> </ol>  |
| All Control Devices .....   | Presence of flow diverted to the atmosphere from the control device [63.114(d)(1)] <i>or</i> . | <ol style="list-style-type: none"> <li>1. Hourly records of whether the flow indicator was operating and whether flow was detected at any time during each hour.</li> <li>2. Record and report the times and durations of all periods when the vent stream is diverted through a bypass line or the monitor is not operating—PR.</li> </ol>  |

TABLE 3.—PROCESS VENTS—MONITORING, RECORDKEEPING, AND REPORTING REQUIREMENTS FOR COMPLYING WITH 98 WEIGHT-PERCENT REDUCTION OF TOTAL ORGANIC HAP EMISSIONS OR A LIMIT OF 20 PARTS PER MILLION BY VOLUME—Continued

| Control device | Parameters to be monitored <sup>a</sup>              | Recordkeeping and reporting requirements for monitored parameters  |
|----------------|--|--|
|                | Monthly inspections of sealed valves [63.114(d)(2)]. | 1. Records that monthly inspections were performed.<br>2. Record and report all monthly inspections that show the valves are not closed or the seal has been changed—PR. |

<sup>a</sup>Regulatory citations are listed in brackets.  
<sup>b</sup>Monitor may be installed in the firebox or in the ductwork immediately downstream of the firebox before any substantial heat exchange is encountered.  
<sup>c</sup>“Continuous records” is defined in §63.111 of this subpart.  
<sup>d</sup>NCS=Notification of Compliance Status described in §63.152 of this subpart.  
<sup>e</sup>The daily average is the average of all recorded parameter values for the operating day. If all recorded values during an operating day are within the range established in the NCS or operating permit, a statement to this effect can be recorded instead of the daily average.  
<sup>f</sup>The periodic reports shall include the duration of periods when monitoring data is not collected for each excursion as defined in §63.152(c)(2)(ii)(A) of this subpart.  
<sup>g</sup>PR=Periodic Reports described in §63.152 of this subpart.

TABLE 4.—PROCESS VENTS—MONITORING, RECORDKEEPING, AND REPORTING REQUIREMENTS FOR MAINTAINING A TRE INDEX VALUE >1.0 AND ≤4.0

| Final recovery device                                  | Parameters to be monitored <sup>a</sup>   | Recordkeeping and reporting requirements for monitored parameters  |
|--|---|--|
| Absorber <sup>b</sup> .....                            | Exit temperature of the absorbing liquid [63.114(b)(1)], and .....  | 1. Continuous records. <sup>c</sup><br>2. Record and report the exit temperature of the absorbing liquid averaged over the full period of the TRE determination—NCS. <sup>d</sup><br>3. Record the daily average exit temperature of the absorbing liquid for each operating day. <sup>c</sup><br>4. Report all the daily average exit temperatures of the absorbing liquid that are outside the range established in the NCS or operating permit—PR. <sup>f</sup> |
| Condenser <sup>d</sup> .....                           | Exit specific gravity [63.114(b)(1)] .....  | 1. Continuous records.<br>2. Record and report the exit specific gravity averaged over the full period of the TRE determination—NCS.<br>3. Record the daily average exit specific gravity for each operating day. <sup>c</sup><br>4. Report all daily average exit specific gravity values that are outside the range established in the NCS or operating permit—PR.   |
| Carbon Adsorber <sup>d</sup> .....                     | Exit (product side) temperature [63.114(b)(2)] .....  | 1. Continuous records.<br>2. Record and report the exit temperature averaged over the full period of the TRE determination—NCS.<br>3. Record the daily average exit temperature for each operating day. <sup>c</sup><br>4. Report all daily average exit temperatures that are outside the range established in the NCS or operating permit—PR.  |
|  | Total regeneration stream mass flow during carbon bed regeneration cycle(s) [63.114(b)(3)], and                             | 1. Record of total regeneration stream mass flow for each carbon bed regeneration cycle.<br>2. Record and report the total regeneration stream mass flow during each carbon bed regeneration cycle during the period of the TRE determination—NCS.<br>3. Report all carbon bed regeneration cycles when the total regeneration stream mass flow is outside the range established in the NCS or operating permit—PR.  |
|  | Temperature of the carbon bed after regeneration [and within 15 minutes of completing any cooling cycle(s)] [63.114(b)(3)]. | 1. Record of the temperature of the carbon bed after each regeneration during the period of the TRE determination—NCS.<br>2. Record and report the temperature of the carbon bed after each regeneration during the period of the TRE determination—NCS.<br>3. Report all carbon bed regeneration cycles during which temperature of the carbon bed after regeneration is outside the range established in the NCS or operating permit—PR.                         |
| All Recovery Devices (as an alternative to the above). | Concentration level or reading, indicated by an organic monitoring device at the outlet of the recovery device.             | 1. Continuous records.<br>2. Record and report the concentration level or reading averaged over the full period of the TRE determination—NCS.<br>3. Record the daily average concentration level or reading for each operating day. <sup>c</sup><br>4. Report all daily average concentration levels or readings that are outside the range established in the NCS or operating permit—PR.   |

<sup>a</sup>Regulatory citations are listed in brackets.  
<sup>b</sup>Alternatively, these devices may comply with the organic monitoring device provisions listed at the end of this table under "All Recovery Devices."  
<sup>c</sup>"Continuous records" is defined in § 63.111 of this subpart.  
<sup>d</sup>NCS=Notification of Compliance Status described in § 63.152 of this subpart.

<sup>e</sup>The daily average is the average of all values recorded during the operating day. If all recorded values during an operating day are within the range established in the NCS or operating permit, a statement to this effect can be recorded instead of the daily average.  
<sup>r</sup>PR=Periodic Reports described in § 63.152 of this subpart.

TABLE 5.—GROUP 1 STORAGE VESSELS AT EXISTING SOURCES

| Vessel capacity (cubic meters) | Vapor Pressure <sup>1</sup> (kilopascals) |
|--------------------------------|---|
| 75 ≤ capacity <151 .....       | ≥13.1                                     |

TABLE 5.—GROUP 1 STORAGE VESSELS AT EXISTING SOURCES—Continued

| Vessel capacity (cubic meters) | Vapor Pressure <sup>1</sup> (kilopascals) |
|--------------------------------|---|
| 151 ≤ capacity .....           | ≥5.2                                      |

<sup>1</sup> Maximum true vapor pressure of total organic HAP at storage temperature.

TABLE 6.—GROUP 1 STORAGE VESSELS AT NEW SOURCES

| Vessel capacity (cubic meters) | Vapor pressure <sup>a</sup> (kilopascals) |
|--------------------------------|---|
| 38 ≤ capacity <151 .....       | ≥13.1                                     |
| 151 ≤ capacity .....           | ≥0.7                                      |

<sup>a</sup> Maximum true vapor pressure of total organic HAP at storage temperature.

TABLE 7.—TRANSFER OPERATIONS—MONITORING, RECORDKEEPING, AND REPORTING REQUIREMENTS FOR COMPLYING WITH 98 WEIGHT-PERCENT REDUCTION OF TOTAL ORGANIC HAP EMISSIONS OR A LIMIT OF 20 PARTS PER MILLION BY VOLUME

| Control device  | Parameters to be monitored <sup>a</sup>                                     | Recordkeeping and reporting requirements for monitored parameters  |
|---|---|--|
| Thermal Incinerator .....   | Firebox temperature <sup>b</sup> [63.127(a)(1)(i)].                         | <ol style="list-style-type: none"> <li>1. Continuous records<sup>c</sup> during loading.</li> <li>2. Record and report the firebox temperature averaged over the full period of the performance test—NCS.<sup>d</sup></li> <li>3. Record the daily average firebox temperature for each operating day.<sup>e</sup></li> <li>4. Report daily average temperatures that are outside the range established in the NCS or operating permit and all operating days when insufficient monitoring data are collected<sup>f</sup>—PR.<sup>g</sup></li> </ol>   |
| Catalytic Incinerator .....   | Temperature upstream and downstream of the catalyst bed [63.127(a)(1)(ii)]. | <ol style="list-style-type: none"> <li>1. Continuous records during loading.</li> <li>2. Record and report the upstream and downstream temperatures and the temperature difference across the catalyst bed averaged over the full period of the performance test—NCS.</li> <li>3. Record the daily average upstream temperature and temperature difference across catalyst bed for each operating day.<sup>e</sup></li> <li>4. Report all daily average upstream temperatures that are outside the range established in the NCS or operating permit—PR.</li> <li>5. Report all daily average temperature differences across the catalyst bed that are outside the range established in the NCS or operating permit—PR.</li> <li>6. Report all operating days when insufficient monitoring data are collected.<sup>f</sup></li> </ol> |
| Boiler or Process Heater with a design heat input capacity less than 44 megawatts and vent stream is <i>not</i> introduced with or as the primary fuel. | Firebox temperature <sup>b</sup> [63.127(a)(3)].                            | <ol style="list-style-type: none"> <li>1. Continuous records during loading.</li> <li>2. Record and report the firebox temperature averaged over the full period of the performance test—NCS.</li> <li>3. Record the daily average firebox temperature for each operating day.<sup>e</sup></li> <li>4. Report all daily average firebox temperatures that are outside the range established in the NCS or operating permit and all operating days when insufficient data are collected<sup>f</sup>—PR.</li> </ol>  |
| Flare .....   | Presence of a flame at the pilot light [63.127(a)(2)].                      | <ol style="list-style-type: none"> <li>1. Hourly records of whether the monitor was continuously operating and whether the pilot flame was continuously present during each hour.</li> <li>2. Record and report the presence of a flame at the pilot light over the full period of the compliance determination—NCS.</li> <li>3. Record the times and durations of all periods when a pilot flame is absent or the monitor is not operating.</li> <li>4. Report the duration of all periods when all pilot flames of a flare are absent—PR.</li> </ol>   |

TABLE 7.—TRANSFER OPERATIONS—MONITORING, RECORDKEEPING, AND REPORTING REQUIREMENTS FOR COMPLYING WITH 98 WEIGHT-PERCENT REDUCTION OF TOTAL ORGANIC HAP EMISSIONS OR A LIMIT OF 20 PARTS PER MILLION BY VOLUME—Continued

| Control device  | Parameters to be monitored <sup>a</sup>   | Recordkeeping and reporting requirements for monitored parameters  |
|---|---|--|
| Scrubber for Halogenated Vent Streams (Note: Controlled by a combustion device other than a flare).             | pH of scrubber effluent [63.127(a)(4)(i)], and.   | <ol style="list-style-type: none"> <li>1. Continuous records during loading.</li> <li>2. Record and report the pH of the scrubber effluent averaged over the full period of the performance test—NCS.</li> <li>3. Record the daily average pH of the scrubber effluent for each operating day.<sup>e</sup></li> <li>4. Report all daily average pH values of the scrubber effluent that are outside the range established in the NCS or operating permit and all operating days when insufficient monitoring data are collected <sup>f</sup>—PR.</li> </ol>                                  |
| Scrubber for Halogenated Vent Streams (Note: Controlled by a combustion device other than a flare) (Continued). | Scrubber liquid and gas flow rates [63.127(a)(4)(ii)].  | <ol style="list-style-type: none"> <li>1. Continuous records during loading.</li> <li>2. Record and report the scrubber liquid/gas ratio averaged over the full period of the performance test—NCS.</li> <li>3. Record the daily average scrubber liquid/gas ratio for each operating day.<sup>e</sup></li> <li>4. Report all daily average scrubber liquid/gas ratios that are outside the range established in the NCS or operating permit and all operating days when insufficient monitoring data are collected <sup>f</sup>—PR.</li> </ol>  |
| Absorber <sup>h</sup> .....   | Exit temperature of the absorbing liquid [63.127(b)(1)], and  | <ol style="list-style-type: none"> <li>1. Continuous records during loading.</li> <li>2. Record and report the exit temperature of the absorbing liquid averaged over the full period of the performance test—NCS.</li> <li>3. Record the daily average exit temperature of the absorbing liquid for each operating day.<sup>e</sup></li> <li>4. Report all daily average exit temperatures of the absorbing liquid that are outside the range established in the NCS or operating permit and all operating days when insufficient monitoring data are collected <sup>f</sup>—PR.</li> </ol> |
|   | Exit specific gravity [63.127(b)(1)].   | <ol style="list-style-type: none"> <li>1. Continuous records during loading.</li> <li>2. Record and report the exit specific gravity averaged over the full period of the performance test—NCS.</li> <li>3. Record the daily average exit specific gravity for each operating day.<sup>e</sup></li> </ol>  |
| Absorber <sup>h</sup> (Continued) .....   | Exit specific gravity [63.127(b)(1)] (continued).   | <ol style="list-style-type: none"> <li>4. Report all daily average exit specific gravity values that are outside the range established in the NCS or operating permit and all operating days when insufficient monitoring data are collected <sup>f</sup>—PR.</li> </ol>   |
| Condenser <sup>h</sup> .....  | Exit (product side) temperature [63.127(b)(2)].   | <ol style="list-style-type: none"> <li>1. Continuous records during loading.</li> <li>2. Record and report the exit temperature averaged over the full period of the performance test—NCS.</li> <li>3. Record the daily average exit temperature for each operating day.<sup>e</sup></li> <li>4. Report all daily average exit temperatures that are outside the range established in the NCS or operating permit and all operating days when insufficient monitoring data are collected <sup>f</sup>—PR.</li> </ol>   |
| Carbon Adsorber <sup>h</sup> .....  | Total regeneration stream mass flow during carbon bed regeneration cycle(s) [63.127(b)(3)], and                             | <ol style="list-style-type: none"> <li>1. Record of total regeneration stream mass flow for each carbon bed regeneration cycle.</li> <li>2. Record and report the total regeneration stream mass flow during each carbon bed regeneration cycle during the period of the performance test—NCS.</li> <li>3. Report all carbon bed regeneration cycles when the total regeneration stream mass flow is outside the range established in the NCS or operating permit and all operating days when insufficient monitoring data are collected <sup>f</sup>—PR.</li> </ol>                         |
| Carbon Adsorber <sup>h</sup> (Continued)  | Temperature of the carbon bed after regeneration (and within 15 minutes of completing any cooling cycle(s)) [63.127(b)(3)]. | <ol style="list-style-type: none"> <li>1. Records of the temperature of the carbon bed after each regeneration.</li> <li>2. Record and report the temperature of the carbon bed after each regeneration during the period of the performance test—NCS.</li> <li>3. Report all the carbon bed regeneration cycles during which the temperature of the carbon bed after regeneration is outside the range established in the NCS or operating permit and all operating days when insufficient monitoring data are collected <sup>f</sup>—PR.</li> </ol>  |

TABLE 7.—TRANSFER OPERATIONS—MONITORING, RECORDKEEPING, AND REPORTING REQUIREMENTS FOR COMPLYING WITH 98 WEIGHT-PERCENT REDUCTION OF TOTAL ORGANIC HAP EMISSIONS OR A LIMIT OF 20 PARTS PER MILLION BY VOLUME—Continued

| Control device   | Parameters to be monitored <sup>a</sup>  | Recordkeeping and reporting requirements for monitored parameters   |
|--|--|---|
| All Recovery Devices (as an alternative to the above).       | Concentration level or reading indicated by an organic monitoring device at the outlet of the recovery device [63.127(b)]. | 1. Continuous records during loading.<br>2. Record and report the concentration level or reading averaged over the full period of the performance test—NCS.<br>3. Record the daily average concentration level or reading for each operating day. <sup>d</sup><br>4. Report all daily average concentration levels or readings that are outside the range established in the NCS or operating permit and all operating days when insufficient monitoring data are collected—PR. |
| All Control Devices and Vapor Balancing Systems.             | Presence of flow diverted to the atmosphere from the control device [63.127(d)(1)] or                                      | 1. Hourly records of whether the flow indicator was operating and whether flow was detected at any time during each hour.<br>2. Record and report the duration of all periods when the vent stream is diverted through a bypass line or the monitor is not operating—PR.  |
| All Control Devices and Vapor Balancing Systems (Continued). | Monthly inspections of sealed valves [63.127(d)(2)].   | 1. Records that monthly inspections were performed.<br>2. Record and report all monthly inspections that show the valves are not sealed closed or the seal has been changed.  |

<sup>a</sup>Regulatory citations are listed in brackets.

<sup>b</sup>Monitor may be installed in the firebox or in the ductwork immediately downstream of the firebox before any substantial heat exchange is encountered.

<sup>c</sup>"Continuous records" is defined in §63.111 of this subpart.

<sup>d</sup>NCS=Notification of Compliance Status described in §63.152 of this subpart.

<sup>e</sup>The daily average is the average of all recorded parameter values for the operating day. If all recorded values during an operating day are within the range established in the NCS or operating permit, a statement to this effect can be recorded instead of the daily average.

<sup>f</sup>The periodic reports shall include the duration of periods when monitoring data are not collected for each excursion as defined in §63.152(c)(2)(ii)(A) of this subpart.

<sup>g</sup>PR=Periodic Reports described in §63.152 of this subpart.

<sup>h</sup>Alternatively, these devices may comply with the organic monitoring device provisions listed at the end of this table under "All Recovery Devices."

TABLE 8.—ORGANIC HAP'S SUBJECT TO THE WASTEWATER PROVISIONS FOR PROCESS UNITS AT NEW SOURCES

| Chemical name                                    | CAS No. <sup>a</sup> |
|--|----------------------|
| Allyl chloride .....                             | 107051               |
| Benzene .....                                    | 71432                |
| Butadiene (1,3-) .....                           | 106990               |
| Carbon disulfide .....                           | 75150                |
| Carbon tetrachloride .....                       | 56235                |
| Cumene .....                                     | 98828                |
| Ethylbenzene .....                               | 100414               |
| Ethyl chloride (Chloroethane) .....              | 75003                |
| Ethylidene dichloride (1,1-Dichloroethane) ..... | 75343                |
| Hexachlorobutadiene .....                        | 87683                |
| Hexachloroethane .....                           | 67721                |
| Hexane .....                                     | 100543               |
| Methyl bromide (Bromomethane) .....              | 74839                |
| Methyl chloride (Chloromethane) .....            | 74873                |
| Phosgene .....                                   | 75445                |

TABLE 8.—ORGANIC HAP'S SUBJECT TO THE WASTEWATER PROVISIONS FOR PROCESS UNITS AT NEW SOURCES—Continued

| Chemical name                                      | CAS No. <sup>a</sup> |
|--|----------------------|
| Tetrachloroethylene (Perchloroethylene) .....      | 127184               |
| Toluene .....                                      | 108883               |
| Trichloroethane (1,1,1-) (Methyl chloroform) ..... | 71556                |
| Trichloroethylene .....                            | 79016                |
| Trimethylpentane (2,2,4-) .....                    | 540841               |
| Vinyl chloride (chloroethylene) .....              | 75014                |
| Vinylidene chloride (1,1-Dichloroethylene) .....   | 75354                |
| Xylene (m-) .....                                  | 108383               |
| Xylene (p-) .....                                  | 106423               |

<sup>a</sup>CAS numbers refer to the Chemical Abstracts Service registry number assigned to specific compounds, isomers, or mixtures of compounds.

Note.—The list of organic HAP's on table 8 is a subset of the list of organic HAP's on table 9 of this subpart.

TABLE 9.—ORGANIC HAP'S SUBJECT TO THE WASTEWATER PROVISIONS FOR PROCESS UNITS AT NEW AND EXISTING SOURCES AND CORRESPONDING FRACTION REMOVED (FR) VALUES

| Chemical name         | CAS No. <sup>a</sup> | Fr   |
|-----------------------|----------------------|------|
| Acetaldehyde .....    | 75070                | 0.95 |
| Acetonitrile .....    | 75058                | 0.62 |
| Acetophenone .....    | 98862                | 0.72 |
| Acrolein .....        | 107028               | 0.96 |
| Acrylonitrile .....   | 107131               | 0.96 |
| Allyl chloride .....  | 107051               | 0.99 |
| Benzene .....         | 71432                | 0.99 |
| Benzyl chloride ..... | 100447               | 0.99 |

TABLE 9.—ORGANIC HAP'S SUBJECT TO THE WASTEWATER PROVISIONS FOR PROCESS UNITS AT NEW AND EXISTING SOURCES AND CORRESPONDING FRACTION REMOVED (FR) VALUES—Continued

| Chemical name                                 | CAS No. <sup>a</sup> | Fr   |
|---|----------------------|------|
| Biphenyl                                      | 92524                | 0.99 |
| Bromoform                                     | 75252                | 0.99 |
| Butadiene (1,3-)                              | 106990               | 0.99 |
| Carbon disulfide                              | 75150                | 0.99 |
| Carbon tetrachloride                          | 56235                | 0.99 |
| Chlorobenzene                                 | 108907               | 0.99 |
| Chloroform                                    | 67663                | 0.99 |
| Chloroprene (2-Chloro-1,3-butadiene)          | 126998               | 0.99 |
| Cumene  | 98828                | 0.99 |
| Dichlorobenzene (p-)                          | 106467               | 0.99 |
| Dichloroethane (1,2-) (Ethylene dichloride)   | 107062               | 0.99 |
| Dichloroethyl ether (Bis(2-chloroethyl)ether) | 111444               | 0.87 |
| Dichloropropene (1,3-)                        | 542756               | 0.99 |
| Diethyl sulfate                               | 64675                | 0.90 |
| Dimethyl sulfate                              | 77781                | 0.53 |
| Dimethylaniline (N,N-)                        | 121697               | 0.99 |
| Dimethylhydrazine (1,1-)                      | 57147                | 0.57 |
| Dinitrophenol (2,4-)                          | 51285                | 0.99 |
| Dinitrotoluene (2,4-)                         | 121142               | 0.38 |
| Dioxane (1,4-) (1,4-Diethyleneoxide)          | 123911               | 0.37 |
| Epichlorohydrin(1-Chloro-2,3-epoxypropane)    | 106898               | 0.91 |
| Ethyl acrylate                                | 140885               | 0.99 |
| Ethylbenzene                                  | 100414               | 0.99 |
| Ethyl chloride (Chloroethane)                 | 75003                | 0.99 |
| Ethylene dibromide (Dibromomethane)           | 106934               | 0.99 |
| Ethylene glycol dimethyl ether                | 110714               | 0.90 |
| Ethylene glycol monobutyl ether acetate       | 112072               | 0.76 |
| Ethylene glycol monomethyl ether acetate      | 110496               | 0.28 |
| Ethylene oxide                                | 75218                | 0.98 |
| Ethylidene dichloride (1,1-Dichloroethane)    | 75343                | 0.99 |
| Hexachlorobenzene                             | 118741               | 0.99 |
| Hexachlorobutadiene                           | 87683                | 0.99 |
| Hexachloroethane                              | 67721                | 0.99 |
| Hexane  | 110543               | 0.99 |
| Isophorone                                    | 78591                | 0.60 |
| Methanol                                      | 67561                | 0.31 |
| Methyl bromide (Bromomethane)                 | 74839                | 0.99 |
| Methyl chloride (Chloromethane)               | 74873                | 0.99 |
| Methyl ethyl ketone (2-Butanone)              | 78933                | 0.95 |
| Methyl isobutyl ketone (Hexone)               | 108101               | 0.99 |
| Methyl methacrylate                           | 80626                | 0.98 |
| Methyl tert-butyl ether                       | 1634044              | 0.99 |
| Methylene chloride (Dichloromethane)          | 75092                | 0.99 |
| Naphthalene                                   | 91203                | 0.99 |
| Nitrobenzene                                  | 98953                | 0.80 |
| Nitropropane (2-)                             | 79469                | 0.98 |
| Phosgene                                      | 75445                | 0.99 |
| Propionaldehyde                               | 123386               | 0.99 |
| Propylene dichloride (1,2-Dichloropropane)    | 78875                | 0.99 |
| Propylene oxide                               | 75569                | 0.99 |
| Styrene                                       | 100425               | 0.99 |
| Tetrachloroethane (1,1,2,2-)                  | 79345                | 0.99 |
| Tetrachloroethylene (Perchloroethylene)       | 127184               | 0.99 |
| Toluene                                       | 108883               | 0.99 |
| Toluidine (o-)                                | 95534                | 0.44 |
| Trichlorobenzene (1,2,4-)                     | 120821               | 0.99 |
| Trichloroethane (1,1,1-) (Methyl chloroform)  | 71556                | 0.99 |
| Trichloroethane (1,1,2-) (Vinyl trichloride)  | 79005                | 0.99 |
| Trichloroethylene                             | 79016                | 0.99 |
| Trichlorophenol (2,4,5-)                      | 95954                | 0.96 |
| Triethylamine                                 | 121448               | 0.99 |
| Trimethylpentane (2,2,4-)                     | 540841               | 0.99 |
| Vinyl acetate                                 | 108054               | 0.99 |
| Vinyl chloride (Chloroethylene)               | 75014                | 0.99 |
| Vinylidene chloride (1,1-Dichloroethylene)    | 75354                | 0.99 |
| Xylene (m-)                                   | 108383               | 0.99 |
| Xylene (o-)                                   | 95476                | 0.99 |
| Xylene (p-)                                   | 106423               | 0.99 |

<sup>a</sup>CAS numbers refer to the Chemical Abstracts Service registry number assigned to specific compounds, isomers, or mixtures of compounds.

TABLE 10.—WASTEWATER—COMPLIANCE OPTIONS FOR WASTEWATER TANKS

| Capacity (m <sup>3</sup> ) | Maximum true vapor pressure (kPa) | Control requirements |
|----------------------------|-----------------------------------|----------------------|
| <75 .....                  | .....                             | § 63.133(a)(1)       |
| "75 and <151 .....         | <13.1                             | § 63.133(a)(1)       |
|                            | "13.1                             | § 63.133(a)(2)       |
| "151 .....                 | <5.2                              | § 63.133(a)(1)       |
|                            | "5.2                              | § 63.133(a)(2)       |

TABLE 11.—WASTEWATER—INSPECTION AND MONITORING REQUIREMENTS FOR WASTE MANAGEMENT UNITS

| To comply with                               | Inspection or monitoring requirement   | Frequency                              | Method                                |
|--|--|--|---------------------------------------|
| <b>Tanks:</b>                                |  |  |                                       |
| 63.133(b)(1) .....                           | Inspect fixed roof and all openings for leaks <sup>a</sup> ...   | Initially .....<br>Semi-annually ..... | Method 21 <sup>b</sup><br>Visual.     |
| 63.133(c) .....                              | Inspect floating roof in accordance with §§ 63.120 (a)(2) and (a)(3).  | See § 63.120(a)(2) and (a)(3).         | Visual.                               |
| 63.133(d) .....                              | Measure floating roof seal gaps in accordance with §§ 63.120(b)(2)(i) through (b)(4).<br>—Primary seal gaps .....  | Once every 5 years.<br>Annually.       | See § 63.120(b)(2)(i) through (b)(4). |
| 63.133(f), 63.133(g)                         | —Secondary seal gaps .....<br>Inspect wastewater tank for control equipment failures and improper work practices.  | Semi-annually .....                    | Visual.                               |
| <b>Surface impoundments:</b>                 |  |  |                                       |
| 63.134(b)(1)(i),<br>63.134(b)(1)(ii).        | Inspect cover and all openings for leaks <sup>a</sup> .....  | Initially .....<br>Semi-annually ..... | Method 21 <sup>b</sup><br>Visual.     |
| 63.134(c) .....                              | Inspect surface impoundment for control equipment failures and improper work practices.  | Semi-annually .....                    | Visual.                               |
| <b>Containers:</b>                           |  |  |                                       |
| 63.135(b)(1),<br>63.135(b)(2)(ii).           | Inspect cover and all openings for leaks <sup>a</sup> .....  | Initially .....                        | Method 21 <sup>b</sup> .              |
| 63.135(d)(1) .....                           | Inspect enclosure and all openings for leaks <sup>a</sup> ...  | Initially .....<br>Semi-annually ..... | Method 21 <sup>b</sup><br>Visual.     |
| 63.135(e) .....                              | Inspect container for control equipment failures and improper work practices.  | Semi-annually .....                    | Visual.                               |
| <b>Individual drain systems<sup>c</sup>:</b> |  |  |                                       |
| 63.136(b)(1) .....                           | Inspect cover and all openings for leaks <sup>a</sup> .....  | Initially .....<br>Semi-annually ..... | Method 21 <sup>b</sup><br>Visual.     |
| 63.136(c) .....                              | Inspect individual drain system for control equipment failures and improper work practices.  | Semi-annually .....                    | Visual.                               |
| 63.136(e)(1) .....                           | Verify flow of water supply to all drains using water seals to ensure appropriate water levels and to prevent other conditions that reduce water seal control effectiveness. | Semi-annually .....                    | Visual.                               |
| 63.136(f)(1) .....                           | Inspect all drains using tightly-sealed caps or plugs to ensure caps and plugs are in place and properly installed.  | Semi-annually .....                    | Visual.                               |
| 63.136(f)(2) .....                           | Inspect all junction boxes to ensure covers are in place and have tight seals around edges.  | Semi-annually .....                    | Visual.                               |
| 63.136(f)(3) .....                           | Inspect unburied portion of all sewer lines for cracks and gaps.   | Semi-annually .....                    | Visual.                               |
| <b>Oil-water separators:</b>                 |  |  |                                       |
| 63.137(b)(1) .....                           | Inspect fixed roof and all openings for leaks <sup>a</sup> ...   | Initially .....<br>Semi-annually ..... | Method 21 <sup>b</sup><br>Visual.     |
| 63.137(c) .....                              | Measure floating roof seal gaps in accordance with 40 CFR 60.696(d)(1).<br>—Primary seal gaps .....  | Once every 5 years.<br>Annually.       | See 40 CFR 60.696(d)(1).              |
| 63.137(c) .....                              | —Secondary seal gaps .....   | Annually.                              |                                       |
| 63.137(d) .....                              | Inspect oil-water separator for control equipment failures and improper work practices.  | Semi-annually .....                    | Visual.                               |

<sup>a</sup> Leaks are detectable emissions of 500 parts per million by volume above background.  
<sup>b</sup> Method 21 of 40 CFR part 60, appendix A. The owner or operator shall comply with the requirements of § 63.148.  
<sup>c</sup> As specified in § 63.136(a), the owner or operator shall comply with the requirements of either § 63.136(b) or (c).

TABLE 12.—WASTEWATER—MONITORING REQUIREMENTS FOR TREATMENT PROCESSES

| To comply with  | Parameters to be monitored  | Frequency                    | Methods   |
|---|---|------------------------------|---|
| 1. HAP mass removal of each organic HAP compound or total organic HAP compounds in a properly operated biological treatment unit.<br>63.138(b)(1)(iii)(C)<br>63.138(c)(1)(iii)(D) | Appropriate parameters may be monitored upon approval from the permitting authority in accordance with the requirements specified in § 63.143(c). | Continuous                   | Method 304, or any other method which has been approved by EPA during compliance demonstrations.  |
| 2. HAP mass removal of 95 percent of total organic HAP compounds in a properly operated biological treatment unit.<br>63.138(e)   | Appropriate parameters may be monitored upon approval from the permitting authority in accordance with the requirements specified in § 63.143(c). | Continuous                   | Method 304, or any other method which has been approved by EPA during compliance demonstrations.  |
| 3. Design steam stripper  | Steam flow rate   | Continuously                 | Integrating steam flow monitoring device equipped with a continuous recorder.   |
| 63.138(g) (3), (4), and (5)   | Wastewater feed mass flow rate<br>Wastewater feed temperature   | Continuously<br>Continuously | Liquid flow meter installed at stripper influent and equipped with a continuous recorder.<br>Liquid temperature monitoring device installed at stripper influent and equipped with a continuous recorder. |
| 4. Alternative monitoring parameters  | Other parameters may be monitored upon approval from the Administrator in accordance with the requirements specified in § 63.143(d).              | Continuously                 |   |

<sup>a</sup> If method(s) are used to measure organic HAP concentrations in a waste or wastewater stream, rather than measuring VOHAP concentrations in an air stream purged from a waste or wastewater stream, the correction factors listed in table 34 may be used to adjust the results to provide a measure of the volatile portion (i.e., the VOHAP concentration) of the organic HAP compounds.

TABLE 13.—WASTEWATER—MONITORING REQUIREMENTS FOR CONTROL DEVICES

| Control device        | Monitoring equipment required   | Parameters to be monitored  | Frequency   |
|-----------------------|---|---|---|
| All control devices   | 1. Flow indicator installed at all bypass lines to the atmosphere and equipped with continuous recorder <sup>b</sup> or.<br>2. Valves sealed closed with car-seal or lock-and-key configuration.<br>Temperature monitoring device installed in firebox or in ductwork immediately downstream of firebox <sup>a</sup> and equipped with a continuous recorder <sup>b</sup> .<br>Temperature monitoring device installed in gas stream immediately before and after catalyst bed and equipped with a continuous recorder <sup>b</sup> . | 1. Presence of flow diverted from the control device to the atmosphere or.<br>2. Monthly inspections of sealed valves.<br>Firebox temperature | Hourly records of whether the flow indicator was operating and whether the flow was detected at any time during each hour.<br>Monthly.<br>Continuous. |
| Thermal Incinerator   |   | 1. Temperature upstream of catalyst bed or.<br>2. Temperature difference across catalyst bed.   | Continuous.   |
| Catalytic Incinerator |   | Presence of a flame at the pilot light  | Hourly records of whether the monitor was continuously operating and whether the pilot flame was continuously present during each hour.               |

|  |  |  |   |
|--|--|--|---|
| <p>Boiler or process heater &lt;44 megawatts and vent stream is not mixed with the primary fuel.</p> <p>Condenser .....</p> <p>Carbon Adsorber (Regenerative).</p> | <p>Temperature monitoring device installed in firebox<sup>a</sup> and equipped with continuous recorder<sup>b</sup>.</p> <p>Temperature monitoring device installed at condenser exit and equipped with continuous recorder<sup>b</sup>. Integrating regeneration stream flow monitoring device having an accuracy of ±10 percent, and.</p> <p>Carbon bed temperature monitoring device .....</p> <p>Organic compound concentration monitoring device: .....</p> <p>Other parameters may be Monitored upon approval from the Administrator in accordance with the requirements in §63.143(e)(3).</p> | <p>Combustion temperature .....</p> <p>Condenser exit (product side) temperature.</p> <p>Total regeneration stream mass flow during carbon bed regeneration cycle(s).</p> <p>Temperature of carbon bed after regeneration [and within 15 minutes of completing any cooling cycle(s)].</p> <p>Organic compound concentration of adsorber exhaust.</p> | <p>Continuous.</p> <p>Continuous.</p> <p>For each regeneration cycle, record the total regeneration stream mass flow.</p> <p>For each regeneration cycle and within 15 minutes of completing any cooling cycle, record the carbon bed temperature.</p> <p>Daily or at intervals no greater than 20 percent of the design carbon replacement interval, whichever is greater.</p> |
|--|--|--|---|

<sup>a</sup> Monitor may be installed in the firebox or in the ductwork immediately downstream of the firebox before any substantial heat exchange is encountered.

<sup>b</sup> "Continuous recorder" is defined in § 63.111 of this subpart.

<sup>c</sup> As an alternative to conducting this monitoring, an owner or operator may replace the carbon in the carbon adsorption system with fresh carbon at a regular predetermined time interval that is less than the carbon replacement interval that is determined by the maximum design flow rate and organic concentration in the gas stream vented to the carbon adsorption system.

TABLE 14a.—WASTEWATER—INFORMATION ON TABLE 8 ORGANIC HAP'S TO BE SUBMITTED WITH IMPLEMENTATION PLAN FOR PROCESS UNITS AT NEW SOURCES <sup>a,b</sup>

| Process unit identification <sup>c</sup> | Stream identification | VOHAP concentration (ppmw) <sup>d,e</sup> | Flow rate (lpm) <sup>e,f</sup> | Group 1 or group 2 <sup>g</sup> | Intend to control? <sup>h</sup> (Y or N) | Intended treatment technology <sup>i</sup> | Intended control device |
|--|-----------------------|---|--------------------------------|---------------------------------|--|--|-------------------------|
|  |                       | Average                                   |                                |                                 |  |  |                         |

<sup>a</sup> The information specified in this table must be submitted; however, it may be submitted in any format. This table presents an example format.

- <sup>b</sup> Other requirements for the Implementation Plan are specified in § 63.151 of this Subpart.
- <sup>c</sup> Also include a description of the chemical manufacturing process unit (e.g., storage tank).
- <sup>d</sup> Except when § 63.132(c) is used, annual average VOHAP concentrations, at point of generation, of each HAP compound listed in table 8 of this subpart that is present in the wastewater stream, parts per million by weight (ppmw).
- <sup>e</sup> If § 63.132(c) is used, include annual average VOHAP concentration and flow rate for the point where Group 1 streams are designated.
- <sup>f</sup> Except when § 63.132(c) is used, annual average flow rate at point of generation, liters per minute (lpm).
- <sup>g</sup> Is the stream Group 1 or Group 2 for table 8 compounds as determined by the procedures specified in § 63.132 (c) and (d) of this subpart?
- <sup>h</sup> Does the owner or operator intend to control the stream in accordance with the requirements specified in § 63.138(b) of this Subpart, yes (Y) or no (N)?
- <sup>i</sup> If the owner or operator intends to control the stream, what is the intended treatment technology (e.g., steam stripping, biological treatment, etc.)?

TABLE 14b.—WASTEWATER—INFORMATION ON TABLE 9 ORGANIC HAP'S TO BE SUBMITTED WITH IMPLEMENTATION PLAN FOR PROCESS UNITS AT NEW AND EXISTING SOURCES <sup>a,b</sup>

| Chemical manufacturing process unit identification <sup>c</sup> | Stream identification | Total VOHAP concentration (ppmw) <sup>d,e</sup> | Flow rate (lpm) <sup>e,f</sup> | Group 1 or group 2 <sup>g</sup> | Intend to control? <sup>h</sup> (Y or N) | Intended treatment technology <sup>i</sup> | Intended control device |
|---|-----------------------|---|--------------------------------|---------------------------------|--|--|-------------------------|
|   |                       | Average   |                                |                                 |  |  |                         |

<sup>a</sup> The information specified in this table must be submitted; however, it may be submitted in any format. This table presents an example format.

- <sup>b</sup> Other requirements for the Implementation Plan are specified in § 63.151 of this subpart.
- <sup>c</sup> Also include a description of the process unit (e.g., storage tank).
- <sup>d</sup> Except when § 63.132(c) is used, annual average total VOHAP concentration in wastewater stream at point of generation, parts per million by weight (ppmw).
- <sup>e</sup> If § 63.132(c) is used, include annual average VOHAP concentration and flow rate for the point where Group 1 streams are designated.
- <sup>f</sup> Except when § 63.132(c) is used, annual average flow rate at point of generation, liters per minute (lpm).
- <sup>g</sup> Is the stream Group 1 or Group 2 for table 9 compounds as determined by the procedures specified in § 63.132(c) or (g) of this subpart?
- <sup>h</sup> Does the owner or operator intend to control the stream in accordance with the requirements of § 63.138(c) or (d) of this Subpart, yes (Y) or no (N)?
- <sup>i</sup> If the owner or operator intends to control the stream, what is the intended treatment technology (e.g., steam stripping, biological treatment, etc.)?

TABLE 15a.—WASTEWATER—INFORMATION ON TABLE 8 ORGANIC HAP'S TO BE SUBMITTED WITH NOTIFICATION OF COMPLIANCE STATUS FOR PROCESS UNITS AT NEW SOURCES <sup>a,b</sup>

| Process unit identification code <sup>c</sup> | Stream identification code | VOHAP concentration (ppmw) <sup>d,e</sup> | Flow rate (lpm) <sup>e,f</sup> | Group 1 or group 2 <sup>g</sup> | Compliance approach <sup>h</sup> | Treatment process(es) identification code <sup>i</sup> | Waste management unit(s) identification <sup>j</sup> | Intended control device |
|---|----------------------------|---|--------------------------------|---------------------------------|----------------------------------|--|--|-------------------------|
|   |                            | Average                                   |                                |                                 |                                  |  |  |                         |

<sup>a</sup> The information specified in this table must be submitted; however, it may be submitted in any format. This table presents an example format.

- <sup>b</sup> Other requirements for the Notification of Compliance Status are specified in § 63.152(b) of this subpart.
- <sup>c</sup> Also include a description of the process unit (e.g., storage tank).
- <sup>d</sup> Except when § 63.132(c) is used, annual average VOHAP concentrations, at point of generation, of each HAP compound listed in table 8 of this subpart that is present in the wastewater stream, parts per million by weight (ppmw).
- <sup>e</sup> When § 63.132(c) is used, include the annual average VOHAP concentration and flow rate for the point where the Group 1 stream is designated.

<sup>1</sup> Except when § 63.132(c) is used, annual average flow rate at point of generation, liters per minute (lpm).  
<sup>2</sup> Is the stream Group 1 or Group 2 for table 8 compounds as determined by the procedures specified in § 63.132 (c) or (d) of this subpart?  
<sup>3</sup> If stream is being controlled in accordance with the requirements of § 63.138(b), identify the subparagraph in § 63.138(b) with which the owner or operator has elected to comply. For example, if the owner or operator elects to recycle the stream to a production process, the appropriate subparagraph is § 63.138(b)(1)(i).  
<sup>4</sup> If the stream is being treated in accordance with the requirements of § 63.138(b), give identification code of treatment unit(s) treating stream. Identification codes should correspond to entries in table 17 of this subpart.  
<sup>5</sup> For each Group 1 wastewater stream, identify the waste management unit(s) receiving or managing the stream. Identification codes should correspond to entries in table 18.

TABLE 15b.—WASTEWATER—INFORMATION ON TABLE 9 ORGANIC HAP'S TO BE SUBMITTED WITH NOTIFICATION OF COMPLIANCE STATUS FOR PROCESS UNITS AT NEW AND EXISTING SOURCES <sup>a,b</sup>

| Process unit identification <sup>c</sup> | Stream identification | Total VOHAP concentration (PPMW) <sup>d,e</sup> | Flow rate (1pm) <sup>e,f</sup> | Group 1 or group 2 <sup>g</sup> | Compliance approach <sup>h</sup> | Treatment process identification <sup>i</sup> | Waste management unit identification <sup>j</sup> | Intended control device |
|--|-----------------------|---|--------------------------------|---------------------------------|----------------------------------|---|---|-------------------------|
|  |                       | Average   |                                |                                 |                                  |   |   |                         |

<sup>a</sup> The information specified in this table must be submitted; however, it may be submitted in any format. This table presents an example format.  
<sup>b</sup> Other requirements for the Notification of Compliance Status are specified in § 63.152(b) of this subpart.  
<sup>c</sup> Also include a description of the process unit (e.g., storage tank).  
<sup>d</sup> Except when § 63.132(c) is used, annual average total VOHAP concentration in wastewater stream at point of generation, parts per million by weight (ppmw).  
<sup>e</sup> When § 63.132(c) is used, include the annual average VOHAP concentration and flow rate for the point where the Group 1 stream is designated.  
<sup>f</sup> Except when § 63.132(c) is used, annual average flow rate at point of generation, liters per minute (1pm).  
<sup>g</sup> Is the stream Group 1 or Group 2 for table 9 HAP compounds as determined by the procedures specified in § 63.132(c) or (g)?  
<sup>h</sup> If the stream is being controlled in accordance with the requirements of § 63.138(c), identify the subparagraph in § 63.138(c) with which the owner or operator has elected to comply. For example, if the owner or operator elects to reduce the total VOHAP mass flow rate of an individual stream by 99 percent, the appropriate subparagraph is § 63.138(c)(1)(ii)(B).  
<sup>i</sup> If stream is being treated in accordance with § 63.138(c), give identification code of treatment unit(s) treating stream. Identification codes should correspond to entries in table 17 of this subpart.  
<sup>j</sup> For each Group 1 wastewater stream, identify the waste management unit(s) receiving or managing the stream. Identification codes should correspond to entries in table 18.

TABLE 16.—WASTEWATER—INFORMATION TO BE SUBMITTED WITH NOTIFICATION OF COMPLIANCE STATUS FOR PROCESS UNITS AT EXISTING SOURCES COMPLYING WITH PROCESS UNIT ALTERNATIVE IN § 63.138(d) <sup>a,b,c</sup>

| Process unit identification <sup>d</sup> | Stream identification | Total VOHAP concentration <sup>e</sup> (ppmw) | Flow <sup>f</sup> rate (lpm) | Treatment process identification <sup>g</sup> | Waste management unit identification <sup>h</sup> |
|--|-----------------------|---|------------------------------|---|---|
|  |                       | Average                                       |                              |   |   |

<sup>a</sup> The information specified in this table shall be provided for each wastewater stream generated by the process unit to which this alternative provision is being applied.  
<sup>b</sup> The information specified in this table must be submitted; however, it may be submitted in any format. This table presents an example format.  
<sup>c</sup> Other requirements for the Notification of Compliance Status are specified in § 63.152(b) of this Subpart.  
<sup>d</sup> Also include a description of the process unit (e.g., storage tank).  
<sup>e</sup> Flow-weighted annual average total VOHAP concentration of individual or combined stream before exposure to the atmosphere and before combination with streams other than process wastewater from the specific process unit, parts per million by weight (ppmw).  
<sup>f</sup> Annual average flow rate of combined or individual wastewater stream, liters per minute (lpm).  
<sup>g</sup> If stream is being controlled, give identification code(s) of treatment unit(s) treating stream. Identification codes should correspond to entries in Table 17.  
<sup>h</sup> For each wastewater stream generated within the process unit, identify the waste management unit(s) receiving or managing the stream. Identification codes should correspond to entries in Table 18.

TABLE 17.—WASTEWATER—INFORMATION FOR TREATMENT PROCESSES TO BE SUBMITTED WITH NOTIFICATION OF COMPLIANCE STATUS <sup>a,b</sup>

| Treatment process identification <sup>c</sup> | Description <sup>d</sup> | Wastewater stream(s) treated <sup>e</sup> | Monitoring parameters <sup>f</sup> |
|---|--------------------------|---|------------------------------------|
|---|--------------------------|---|------------------------------------|

TABLE 17.—WASTEWATER—INFORMATION FOR TREATMENT PROCESSES TO BE SUBMITTED WITH NOTIFICATION OF COMPLIANCE STATUS <sup>a,b</sup>—Continued

| Treatment process identification <sup>c</sup> | Description <sup>d</sup> | Wastewater stream(s) treated <sup>e</sup> | Monitoring parameters <sup>f</sup> |
|---|--------------------------|---|------------------------------------|
|---|--------------------------|---|------------------------------------|

<sup>a</sup> The information specified in this table must be submitted; however, it may be submitted in any format. This table presents an example format.  
<sup>b</sup> Other requirements for the Notification of Compliance Status are specified in § 63.152(b) of this Subpart.  
<sup>c</sup> Identification codes should correspond to those listed in Tables 14a through 16.  
<sup>d</sup> Description of treatment process.  
<sup>e</sup> Stream identification code for each wastewater stream treated by each treatment unit. Identification codes should correspond to entries listed in Tables 14a through 16.  
<sup>f</sup> Parameter(s) to be monitored or measured in accordance with Table 12 in § 63.143 of this Subpart.

TABLE 18.—WASTEWATER—INFORMATION FOR WASTE MANAGEMENT UNITS TO BE SUBMITTED WITH NOTIFICATION OF COMPLIANCE STATUS <sup>a,b</sup>

| Waste management unit identification <sup>c</sup> | Description <sup>d</sup> | Wastewater stream(s) received or managed <sup>e</sup> |
|---|--------------------------|---|
|---|--------------------------|---|

<sup>b</sup> Other requirements for the Notification of Compliance Status are specified in § 63.152(b) of this Subpart.  
<sup>c</sup> Identification codes should correspond to those listed in Tables 14a through 16.  
<sup>d</sup> Description of waste management unit.  
<sup>e</sup> Stream identification code for each wastewater stream received or managed by each waste management unit. Identification codes should correspond to entries listed in Tables 14a through 16.

<sup>a</sup> The information specified in this table must be submitted; however, it may be submitted in any format. This table presents an example format.

TABLE 19.—WASTEWATER—INFORMATION ON RESIDUALS TO BE SUBMITTED WITH NOTIFICATION OF COMPLIANCE STATUS <sup>a,b</sup>

| Residual identification <sup>c</sup> | Residual description <sup>d</sup> | Wastewater stream identification <sup>e</sup> | Treatment process <sup>f</sup> | Fate <sup>g</sup> | Control device identification code | Control device description <sup>h</sup> | Control device efficiency <sup>i</sup> |
|--------------------------------------|-----------------------------------|---|--------------------------------|-------------------|------------------------------------|---|--|
|--------------------------------------|-----------------------------------|---|--------------------------------|-------------------|------------------------------------|---|--|

<sup>a</sup> The information specified in this table must be submitted; however, it may be submitted in any format. This table presents an example format.  
<sup>b</sup> Other requirements for the Notification of Compliance Status are specified in § 63.152(b) of this subpart.  
<sup>c</sup> Name or identification code of residual removed from Group 1 wastewater stream.  
<sup>d</sup> Description of residual (e.g., steam stripper A-13 overhead condensates).  
<sup>e</sup> Identification of stream from which residual is removed.  
<sup>f</sup> Treatment process from which residual originates.  
<sup>g</sup> Indicate whether residual is sold, returned to production process, or returned to waste management unit or treatment process; or whether HAP mass of residual is destroyed by 99 percent.  
<sup>h</sup> If the fate of the residual is such that the HAP mass is destroyed by 99 percent, give description of device used for HAP destruction.  
<sup>i</sup> If the fate of the residual is such that the HAP mass is destroyed by 99 percent, provide an estimate of control device efficiency and attach substantiation in accordance with § 63.146(b)(9) of this subpart.

TABLE 20.—WASTEWATER—PERIODIC REPORTING REQUIREMENTS FOR CONTROL DEVICES USED TO COMPLY WITH §§ 63.133–63.139

| Control device  | Reporting requirements  |
|---|---|
| Thermal incinerator .....   | <ol style="list-style-type: none"> <li>Report all daily average<sup>a</sup> temperatures that are outside the range established in the NCS<sup>a</sup> or operating permit and all operating days when insufficient monitoring data are collected.<sup>c</sup></li> </ol>   |
| Catalytic incinerator .....   | <ol style="list-style-type: none"> <li>Report all daily average<sup>a</sup> upstream temperatures that are outside the range established in the NCS<sup>b</sup> or operating permit</li> <li>Report all daily average<sup>a</sup> temperature differences across the catalyst bed that are outside the range established in the NCS<sup>b</sup> or operating permit</li> <li>Report all operating days when insufficient monitoring data are collected.<sup>c</sup></li> </ol>  |
| Boiler or process heater with a design heat input capacity less than 44 megawatts and vent stream is not mixed with the primary fuel. | <ol style="list-style-type: none"> <li>Report all daily average<sup>a</sup> firebox temperatures that are outside the range established in the NCS<sup>b</sup> or operating permit and all operating days when insufficient monitoring data are collected.<sup>c</sup></li> </ol>   |
| Flare .....   | <ol style="list-style-type: none"> <li>Report the duration of all periods when the pilot flame is absent</li> </ol>   |
| Condenser .....   | <ol style="list-style-type: none"> <li>Report all daily average<sup>a</sup> exit temperatures that are outside the range established in the NCS<sup>b</sup> or operating permit and all operating days when insufficient monitoring data are collected.<sup>c</sup></li> </ol>  |
| Carbon adsorber .....   | <ol style="list-style-type: none"> <li>Report all carbon bed regeneration cycles when the total regeneration stream mass flow is outside the range established in the NCS<sup>b</sup> or operating permit</li> <li>Report all carbon bed regeneration cycles during which the temperature of the carbon bed after regeneration is outside the range established in the NCS<sup>b</sup> or operating permit</li> <li>Report all operating days when insufficient monitoring data are collected.<sup>c</sup></li> </ol> |
| All control devices .....   | <ol style="list-style-type: none"> <li>Report the times and durations of all periods when the vent stream is diverted through a bypass line or the monitor is not operating, or</li> <li>Report all monthly inspections that show the valves are not sealed closed or the seal has been changed</li> </ol>  |

<sup>a</sup> The daily average is the average of all values recorded during the operating day, as specified in § 63.147(e) of this subpart.

<sup>b</sup> NCS = Notification of Compliance Status described in § 63.152 of this subpart.

<sup>c</sup> The periodic reports shall include the duration of periods when monitoring data are not collected for each excursion as defined in § 63.152(c)(2)(ii)(A) of this subpart.

TABLE 21.—AVERAGE STORAGE TEMPERATURE (Ts) AS A FUNCTION OF TANK PAINT COLOR

| Tank Color     | Average Storage Temperature (Ts) |
|----------------|----------------------------------|
| White .....    | T <sub>A</sub> <sup>a</sup> + 0  |
| Aluminum ..... | T <sub>A</sub> + 2.5             |
| Gray .....     | T <sub>A</sub> + 3.5             |

TABLE 21.—AVERAGE STORAGE TEMPERATURE (Ts) AS A FUNCTION OF TANK PAINT COLOR—Continued

| Tank Color  | Average Storage Temperature (Ts) |
|-------------|----------------------------------|
| Black ..... | T <sub>A</sub> + 5.0             |

<sup>a</sup>T<sub>A</sub> is the average annual ambient temperature in degrees Fahrenheit.

TABLE 22.—PAINT FACTORS FOR FIXED ROOF TANKS

| Tank color                |                           | Paint factors (Fp) Paint Condition |      |
|---------------------------|---------------------------|------------------------------------|------|
| Roof                      | Shell                     | Good                               | Poor |
| White .....               | White .....               | 1.00                               | 1.15 |
| Aluminum (specular) ..... | White .....               | 1.04                               | 1.18 |
| White .....               | Aluminum (specular) ..... | 1.16                               | 1.24 |
| Aluminum (specular) ..... | Aluminum (specular) ..... | 1.20                               | 1.29 |
| White .....               | Aluminum (diffuse) .....  | 1.30                               | 1.38 |
| Aluminum (diffuse) .....  | Aluminum (diffuse) .....  | 1.39                               | 1.46 |
| White .....               | Gray .....                | 1.30                               | 1.38 |
| Light gray .....          | Light gray .....          | 1.33                               | 1.44 |
| Medium gray .....         | Medium gray .....         | 1.40                               | 1.58 |

TABLE 23.—AVERAGE CLINGAGE FACTORS (C) <sup>a</sup>

| Liquid                        | Shell condition         |            |                |
|-------------------------------|-------------------------|------------|----------------|
|                               | Light rust <sup>b</sup> | Dense rust | Gunitite lined |
| Gasoline .....                | 0.0015                  | 0.0075     | 0.15           |
| Single component stocks ..... | 0.0015                  | 0.0075     | 0.15           |
| Crude oil .....               | 0.0060                  | 0.030      | 0.60           |

<sup>a</sup>Units for average clingage factors are barrels per 1,000 square feet.  
<sup>b</sup>If no specific information is available, these values can be assumed to represent the most common condition of tanks currently in use.

TABLE 24.—TYPICAL NUMBER OF COLUMNS AS A FUNCTION OF TANK DIAMETER FOR INTERNAL FLOATING ROOF TANKS WITH COLUMN SUPPORTED FIXED ROOFS <sup>a</sup>

| Tank diameter range (D in feet) | Typical number of columns, (N <sub>c</sub> ) |
|---------------------------------|--|
| 0 < D ≤ 85 .....                | 1  |
| 85 < D ≤ 100 .....              | 6  |
| 100 < D ≤ 120 .....             | 7  |
| 120 < D ≤ 135 .....             | 8  |
| 135 < D ≤ 150 .....             | 9  |
| 150 < D ≤ 170 .....             | 16   |
| 170 < D ≤ 190 .....             | 19   |
| 190 < D ≤ 220 .....             | 22   |
| 220 < D ≤ 235 .....             | 31   |
| 235 < D ≤ 270 .....             | 37   |
| 270 < D ≤ 275 .....             | 43   |
| 275 < D ≤ 290 .....             | 49   |
| 290 < D ≤ 330 .....             | 61   |
| 330 < D ≤ 360 .....             | 71   |
| 360 < D ≤ 400 .....             | 81   |

<sup>a</sup>Data in this table should not supersede information on actual tanks.

TABLE 25.—EFFECTIVE COLUMN DIAMETER (F<sub>c</sub>)

| Column type                             | F <sub>c</sub> (feet) |
|---|-----------------------|
| 9-inch by 7-inch built-up columns ..... | 1.1                   |
| 8-inch-diameter pipe columns .....      | 0.7                   |
| No construction details known .....     | 1.0                   |

TABLE 26.—SEAL RELATED FACTORS FOR INTERNAL FLOATING ROOF VESSELS

| Seal type  | K <sub>s</sub> | n |
|--|----------------|---|
| Liquid mounted resilient seal:                     |                |   |
| Primary seal only .....                            | 3.0            | 0 |
| With rim-mounted secondary seal <sup>a</sup> ..... | 1.6            | 0 |
| Vapor mounted resilient seal:                      |                |   |
| Primary seal only .....                            | 6.7            | 0 |
| With rim-mounted secondary seal <sup>a</sup> ..... | 2.5            | 0 |

<sup>a</sup>If vessel-specific information is not available about the secondary seal, assume only a primary seal is present.

Table 27.—SUMMARY OF INTERNAL FLOATING DECK FITTING LOSS FACTORS (K<sub>F</sub>) AND TYPICAL NUMBER OF FITTINGS (N<sub>F</sub>)

| Deck fitting type                         | Deck fitting loss factor (K <sub>F</sub> ) <sup>a</sup> | Typical number of fittings (N <sub>F</sub> ) |
|---|---|--|
| Access hatch .....                        | 1.  | 1.   |
| Bolted cover, gasketed.                   | 1.6   |  |
| Unbolted cover, gasketed.                 | 11  |  |
| Unbolted cover, ungasketed.               | <sup>b</sup> 25   |  |
| Automatic gauge float well.               | .....   |  |
| Bolted cover, gasketed.                   | 5.1   |  |
| Unbolted cover, gasketed.                 | 15  |  |
| Unbolted cover, ungasketed.               | <sup>b</sup> 28   |  |
| Column well .....                         | .....   |  |
| Builtup column-sliding cover, gasketed.   | 33  |  |
| Builtup column-sliding cover, ungasketed. | <sup>b</sup> 47   | (see Table 24).                              |
| Pipe column-flexible fabric sleeve seal.  | 10  |  |
| Pipe column-sliding cover, gasketed.      | 19  |  |
| Pipe column-sliding cover, ungasketed.    | 32  |  |
| Ladder well .....                         | .....   |  |
| Sliding cover, gasketed.                  | 56  |  |
| Sliding cover, ungasketed.                | <sup>b</sup> 76   |  |
| Roof leg or hanger well.                  | .....   |  |
| Adjustable .....                          | <sup>b</sup> 7.9  |  |
| Fixed .....                               | 0   |  |
| Sample pipe or well                       | .....   | 1.   |
| Slotted pipe-sliding cover, gasketed.     | 44  |  |

Table 27.—SUMMARY OF INTERNAL FLOATING DECK FITTING LOSS FACTORS (K<sub>F</sub>) AND TYPICAL NUMBER OF FITTINGS (N<sub>F</sub>)—Continued

| Deck fitting type                                   | Deck fitting loss factor (K <sub>F</sub> ) <sup>a</sup> | Typical number of fittings (N <sub>F</sub> ) |
|---|---|--|
| Slotted pipe-sliding cover, ungasketed.             | 57  | 1.   |
| Sample well-slit fabric seal, 10 percent open area. | <sup>b</sup> 12   |  |
| Stub drain, 1-in diameter <sup>d</sup> .            | 1.2   |  |
| Vacuum breaker .....                                | .....   |  |
| Weighted mechanical actuation, gasketed.            | <sup>b</sup> 0.7  |  |
| Weighted mechanical actuation, ungasketed.          | 0.9   |  |

<sup>a</sup> Units for K<sub>F</sub> are pound-moles per year.  
<sup>b</sup> If no specific information is available, this value can be assumed to represent the most common/typical deck fittings currently used.  
<sup>c</sup> D= Tank diameter (feet).  
<sup>d</sup> Not used on welded contact internal floating decks.

TABLE 28.—DECK SEAM LENGTH FACTORS<sup>a</sup> (S<sub>D</sub>) FOR INTERNAL FLOATING ROOF TANKS

| Deck construction                            | Typical deck seam length factor |
|--|---------------------------------|
| Continuous sheet construction <sup>b</sup> : |                                 |
| 5-foot wide sheets .....                     | 0.2 <sup>c</sup>                |
| 6-foot wide sheets .....                     | 0.17                            |
| 7-foot wide sheets .....                     | 0.14                            |
| Panel construction <sup>d</sup> :            |                                 |
| 5 × 7.5 feet rectangular .....               | 0.33                            |
| 5 × 12 feet rectangular .....                | 0.28                            |

<sup>a</sup> Deck seam loss applies to bolted decks only. Units for S<sub>D</sub> are feet per square feet.  
<sup>b</sup> S<sub>D</sub>=1/W, where W = sheet width (feet).  
<sup>c</sup> If no specific information is available, these factors can be assumed to represent the most common bolted decks currently in use.  
<sup>d</sup> S<sub>D</sub>=(L+W)/LW, where W = panel width (feet), and L = panel length (feet).

TABLE 29.—SEAL RELATED FACTORS FOR EXTERNAL FLOATING ROOF VESSELS

| Seal type                              | Welded ves-    |     | Riveted ves-    |     |
|--|----------------|-----|-----------------|-----|
|  | K <sub>S</sub> | N   | K <sub>S</sub>  | N   |
| Metallic shoe seal:                    |                |     |                 |     |
| Primary seal only .....                | 1.2            | 1.5 | 1.3             | 1.5 |
| With shoe-mounted secondary seal ..... | 0.8            | 1.2 | 1.4             | 1.2 |
| With rim-mounted secondary seal .....  | 0.2            | 1.0 | 0.2             | 1.6 |
| Liquid mounted resilient seal:         |                |     |                 |     |
| Primary seal only .....                | 1.1            | 1.0 | <sup>a</sup> NA | NA  |
| With weather shield .....              | 0.8            | 0.9 | NA              | NA  |
| With rim-mounted secondary seal .....  | 0.7            | 0.4 | NA              | NA  |
| Vapor mounted resilient seal:          |                |     |                 |     |
| Primary seal only .....                | 1.2            | 2.3 | NA              | NA  |
| With weather shield .....              | 0.9            | 2.2 | NA              | NA  |

TABLE 29.—SEAL RELATED FACTORS FOR EXTERNAL FLOATING ROOF VESSELS—Continued

| Seal type                             | Welded ves-<br>sels |     | Riveted ves-<br>sels |    |
|---------------------------------------|---------------------|-----|----------------------|----|
|                                       | K <sub>s</sub>      | N   | K <sub>s</sub>       | N  |
| With rim-mounted secondary seal ..... | 0.2                 | 2.6 | NA                   | NA |

<sup>a</sup> NA=Not applicable.

TABLE 30.—ROOF FITTING LOSS FACTORS,  $K_{Fa}$ ,  $K_{Fb}$ , AND  $M_i$ ,<sup>a</sup> AND TYPICAL NUMBER OF FITTINGS,  $N_F$

| Fitting type and construction details  | Loss factors <sup>b</sup> |   | m<br>(dimensionless) | Typical number of fittings,<br>$N_F$         |
|--|---------------------------|---|----------------------|--|
|  | $K_{Fa}$ (lb-mole/<br>yr) | $K_{Fb}$ (lb-mole/<br>[mi/hr] <sup>m</sup> -yr) |                      |  |
| Access hatch (24-in-diameter well) .....   | 0                         | 0   | ε 0                  | 1.   |
| Bolted cover, gasketed .....   | 2.7                       | 7.1   | 1.0                  |  |
| Unbolted cover, ungasketed .....   | 2.9                       | 0.41  | 1.0                  |  |
| Unslotted guide-pole well (8-in-diameter well) .....                                     | 0                         | 67  | ε 0.98               | 1.   |
| Ungasketed sliding cover .....   | 0                         | 3.0   | 1.4                  |  |
| Gasketed sliding cover .....   | 0                         | 310   | 1.2                  | (d).   |
| Slotted guide-pole/sample well (8-in-diameter unslotted pole, 21-in-diameter well) ..... | 0                         | 29  | 2.0                  |  |
| Ungasketed sliding cover, without float .....  | 0                         | 260   | 1.2                  |  |
| Gasketed sliding cover, with float .....   | 0                         | 8.5   | 1.4                  |  |
| Gauge-float well (20-inch diameter) .....  | 2.3                       | 5.9   | ε 1.0                | 1.   |
| Unbolted cover, ungasketed .....   | 2.4                       | 0.34  | 1.0                  |  |
| Bolted cover, gasketed .....   | 0                         | 0   | 0                    |  |
| Gauge-hatch/sample well (8-inch diameter) .....  | 0.95                      | 0.14  | ε 1.0                | 1.   |
| Weighted mechanical actuation, gasketed .....  | 0.91                      | 2.4   | 1.0                  |  |
| Weighted mechanical actuation, ungasketed .....  | 1.2                       | 0.17  | ε 1.0                | $N_{F6}$ (Table 31).                         |
| Vacuum breaker (10-in-diameter well) .....   | 1.2                       | 3.0   | 1.0                  | $N_{F7}$ (Table 31),<br>$N_{F8}$ (Table 32). |
| Weighted mechanical actuation, gasketed .....  | 0                         | 7.0   | ε 1.4                |  |
| Weighted mechanical actuation, ungasketed .....  | 0.51                      | 0.81  | 1.0                  | $N_{F8}$ (Table 32).                         |
| Roof drain (3-in-diameter) .....   | 1.5                       | 0.20  | ε 1.0                |  |
| Open .....   | 0.25                      | 0.067   | ε 1.0                |  |
| 90 percent closed .....  | 0                         | 0   | 0                    |  |
| Roof leg (3-in-diameter) .....   |                           |   |                      |  |
| Adjustable, pontoon area .....   |                           |   |                      |  |
| Adjustable, center area .....  |                           |   |                      |  |
| Adjustable, double-deck roofs .....  |                           |   |                      |  |
| Fixed .....  |                           |   |                      |  |

TABLE 30.—ROOF FITTING LOSS FACTORS,  $K_{F2a}$ ,  $K_{F2b}$ , AND  $M$ ,<sup>a</sup> AND TYPICAL NUMBER OF FITTINGS,  $N_f$ —Continued

| Fitting type and construction details           | Loss factors <sup>b</sup> |  |                     | Typical number of fittings, $N_f$ |
|---|---------------------------|--|---------------------|-----------------------------------|
|   | $K_{F2a}$ (lb-mole/yr)    | $K_{F2b}$ (lb-mole/[mi/hr] <sup>m</sup> -yr) | $m$ (dimensionless) |                                   |
| Roof leg (2 1/2-in-diameter) .....              | 1.7                       | 0  | 0                   | $N_{F28}$ (Table 32).             |
| Adjustable, pontoon area .....                  | 0.41                      | 0  | 0                   |                                   |
| Adjustable, center area .....                   | 0.41                      | 0  | 0                   |                                   |
| Adjustable, double-deck roofs .....             | 0                         | 0  | 0                   |                                   |
| Fixed .....                                     | 0                         | 0  | 0                   |                                   |
| Rim vent (6-in-diameter) .....                  | 0.71                      | 0.10   | <sup>c</sup> 1.0    |                                   |
| Weighted mechanical actuation, gasketed .....   | 0.68                      | 1.8  | 1.0                 |                                   |
| Weighted mechanical actuation, ungasketed ..... |                           |  |                     |                                   |

<sup>a</sup> The roof fitting loss factors,  $K_{F2a}$ ,  $K_{F2b}$ , and  $m$ , may only be used for wind speeds from 2 to 15 miles per hour.  
<sup>b</sup> Unit abbreviations are as follows: lb = pound; mi = miles; hr = hour; yr = year.  
<sup>c</sup> If no specific information is available, this value can be assumed to represent the most common or typical roof fittings currently in use.  
<sup>d</sup> A slotted guide-pole/sample well is an optional fitting and is not typically used.  
<sup>e</sup> Roof drains that drain excess rainwater into the product are not used on pontoon floating roofs. They are, however, used on double-deck floating roofs and are typically left open.  
<sup>f</sup> The most common roof leg diameter is 3 inches. The loss factors for 2 1/2-inch diameter roof legs are provided for use if this smaller size roof is used on a particular floating roof.  
<sup>g</sup> Rim vents are used only with mechanical-shoe primary seals.

TABLE 31.—TYPICAL NUMBER OF VACUUM BREAKERS, N<sub>F6</sub> AND ROOF DRAINS,<sup>a</sup> N<sub>F7</sub>

| Tank diameter D (feet) <sup>b</sup> | No. of vacuum breakers, N <sub>F6</sub> |                  | No. of roof drains, N <sub>F7</sub> double-deck roof <sup>c</sup> |
|-------------------------------------|---|------------------|---|
|                                     | Pontoon roof                            | Double-deck roof |   |
| 50 .....                            | 1                                       | 1                | 1   |
| 100 .....                           | 1                                       | 1                | 1   |
| 150 .....                           | 2                                       | 2                | 2   |
| 200 .....                           | 3                                       | 2                | 3   |
| 250 .....                           | 4                                       | 3                | 5   |
| 300 .....                           | 5                                       | 3                | 7   |
| 350 .....                           | 6                                       | 4                | d   |
| 400 .....                           | 7                                       | 4                | d   |

<sup>a</sup>This table should not supersede information based on actual tank data.

<sup>b</sup>If the actual diameter is between the diameters listed, the closest diameter listed should be used. If the actual diameter is midway between the diameters listed, the next larger diameter should be used.

<sup>c</sup>Roof drains that drain excess rainwater into the product are not used on pontoon floating roofs. They are, however, used on double-deck floating roofs, and are typically left open.

<sup>d</sup>For tanks more than 300 feet in diameter, actual tank data or the manufacturer's recommendations may be needed for the number of roof drains.

TABLE 32.—TYPICAL NUMBER OF ROOF LEGS,<sup>a</sup> N<sub>F8</sub>—Continued

| Tank diameter D (feet) <sup>b</sup> | Pontoon roof        |                    | No. of legs on double-deck roof |
|-------------------------------------|---------------------|--------------------|---------------------------------|
|                                     | No. of pontoon legs | No. of center legs |                                 |
| 100 .....                           | 17                  | 16                 | 25                              |
| 110 .....                           | 18                  | 20                 | 29                              |
| 120 .....                           | 19                  | 24                 | 34                              |
| 130 .....                           | 20                  | 28                 | 40                              |
| 140 .....                           | 21                  | 33                 | 46                              |
| 150 .....                           | 23                  | 38                 | 52                              |
| 160 .....                           | 26                  | 42                 | 58                              |
| 170 .....                           | 27                  | 49                 | 66                              |
| 180 .....                           | 28                  | 56                 | 74                              |
| 190 .....                           | 29                  | 62                 | 82                              |
| 200 .....                           | 30                  | 69                 | 90                              |
| 210 .....                           | 31                  | 77                 | 98                              |
| 220 .....                           | 32                  | 83                 | 107                             |
| 230 .....                           | 33                  | 92                 | 115                             |
| 240 .....                           | 34                  | 101                | 127                             |
| 250 .....                           | 34                  | 109                | 138                             |
| 260 .....                           | 36                  | 118                | 149                             |
| 270 .....                           | 36                  | 128                | 162                             |
| 280 .....                           | 37                  | 138                | 173                             |
| 290 .....                           | 38                  | 148                | 186                             |
| 300 .....                           | 38                  | 156                | 200                             |
| 310 .....                           | 39                  | 168                | 213                             |
| 320 .....                           | 39                  | 179                | 226                             |
| 330 .....                           | 40                  | 190                | 240                             |
| 340 .....                           | 41                  | 202                | 255                             |
| 350 .....                           | 42                  | 213                | 270                             |
| 360 .....                           | 44                  | 226                | 285                             |
| 370 .....                           | 45                  | 238                | 300                             |
| 380 .....                           | 46                  | 252                | 315                             |
| 390 .....                           | 47                  | 266                | 330                             |
| 400 .....                           | 48                  | 281                | 345                             |

<sup>a</sup>This table should not supersede information based on actual tank data.

<sup>b</sup>If the actual diameter is between the diameters listed, the closest diameter listed should be used. If the actual diameter is midway between the diameters listed, the next larger diameter should be used.

TABLE 32.—TYPICAL NUMBER OF ROOF LEGS,<sup>a</sup> N<sub>F8</sub>

| Tank diameter D (feet) <sup>b</sup> | Pontoon roof        |                    | No. of legs on double-deck roof |
|-------------------------------------|---------------------|--------------------|---------------------------------|
|                                     | No. of pontoon legs | No. of center legs |                                 |
| 30 .....                            | 4                   | 2                  | 6                               |
| 40 .....                            | 4                   | 4                  | 7                               |
| 50 .....                            | 6                   | 6                  | 8                               |
| 60 .....                            | 9                   | 7                  | 10                              |
| 70 .....                            | 13                  | 9                  | 13                              |
| 80 .....                            | 15                  | 10                 | 16                              |
| 90 .....                            | 16                  | 12                 | 20                              |

TABLE 33.—SATURATION FACTORS

| Cargo carrier                        | Mode of operation  | S factor |
|--------------------------------------|--|----------|
| Tank trucks and rail tank cars ..... | Submerged loading of a clean cargo tank .....            | 0.50     |
|                                      | Submerged loading: dedicated normal service .....        | 0.60     |
|                                      | Submerged loading: dedicated vapor balance service ..... | 1.00     |
|                                      | Splash loading of a clean cargo tank .....               | 1.45     |
|                                      | Splash loading: dedicated normal service .....           | 1.45     |
|                                      | Splash loading: dedicated vapor balance service .....    | 1.00     |

TABLE 34. FRACTION MEASURED (F<sub>m</sub>) AND FRACTION EMITTED (F<sub>e</sub>) FOR HAP COMPOUNDS IN WASTEWATER STREAMS

| Chemical name          | CAS Number <sup>a</sup> | F <sub>m</sub> | F <sub>e</sub> |
|------------------------|-------------------------|----------------|----------------|
| Acetaldehyde .....     | 75070                   | 1.00           | 0.48           |
| Acetonitrile .....     | 75058                   | 0.99           | 0.36           |
| Acetophenone .....     | 98862                   | 0.31           | 0.14           |
| Acrolein .....         | 107028                  | 1.00           | 0.43           |
| Acrylonitrile .....    | 107131                  | 1.00           | 0.43           |
| Allyl chloride .....   | 107051                  | 1.00           | 0.89           |
| Benzene .....          | 71432                   | 1.00           | 0.80           |
| Benzyl chloride .....  | 100447                  | 1.00           | 0.47           |
| Biphenyl .....         | 92524                   | 0.86           | 0.45           |
| Bromoform .....        | 75252                   | 1.00           | 0.49           |
| Butadiene (1,3-) ..... | 106990                  | 1.00           | 0.98           |

TABLE 34. FRACTION MEASURED ( $F_m$ ) AND FRACTION EMITTED ( $F_e$ ) FOR HAP COMPOUNDS IN WASTEWATER STREAMS—Continued

| Chemical name                                  | CAS Number <sup>a</sup> | $F_m$   | $F_e$ |
|--|-------------------------|---------|-------|
| Carbon disulfide                               | 75150                   | 1.00    | 0.92  |
| Carbon tetrachloride                           | 56235                   | 1.00    | 0.94  |
| Chlorobenzene                                  | 108907                  | 0.96    | 0.73  |
| Chloroform                                     | 67663                   | 1.00    | 0.78  |
| Chloroprene (2-Chloro-1,3-butadiene)           | 126998                  | 1.00    | 0.68  |
| Cumene   | 98828                   | 1.00    | 0.88  |
| Dichlorobenzene (p-)                           | 106467                  | 1.00    | 0.72  |
| Dichloroethane (1,2-) (Ethylene dichloride)    | 107062                  | 1.00    | 0.64  |
| Dichloroethyl ether (Bis(2-Chloroethyl ether)) | 111444                  | 0.76    | 0.21  |
| Dichloropropene (1,3-)                         | 542756                  | 1.00    | 0.76  |
| Diethyl sulfate                                | 64675                   | 0.0025  | 0.11  |
| Dimethyl sulfate                               | 77781                   | 0.086   | 0.079 |
| Dimethylaniline (N,N-)                         | 121697                  | 0.00080 | 0.34  |
| Dimethylhydrazine (1,1-)                       | 57147                   | 0.38    | 0.504 |
| Dinitrophenol (2,4-)                           | 51285                   | 0.0077  | 0.060 |
| Dinitrotoluene (2,4-)                          | 121142                  | 0.085   | 0.18  |
| Dioxane (1,4-) (1,4-Diethyleneoxide)           | 123911                  | 0.87    | 0.18  |
| Epichlorohydrin(1-Chloro-2,3-epoxypropane)     | 106898                  | 0.94    | 0.35  |
| Ethyl acrylate                                 | 140885                  | 1.00    | 0.48  |
| Ethylbenzene                                   | 100414                  | 1.00    | 0.83  |
| Ethyl chloride (Chloroethane)                  | 75003                   | 1.00    | 0.90  |
| Ethylene dibromide (Dibromomethane)            | 106934                  | 1.00    | 0.57  |
| Ethylene glycol dimethyl ether                 | 110714                  | 0.86    | 0.32  |
| Ethylene glycol monobutyl ether acetate        | 112072                  | 0.043   | 0.067 |
| Ethylene glycol monomethyl ether acetate       | 110496                  | 0.093   | 0.048 |
| Ethylene oxide                                 | 75218                   | 1.00    | 0.50  |
| Ethylidene dichloride (1,1-Dichloroethane)     | 75343                   | 1.00    | 0.79  |
| Hexachlorobenzene                              | 118741                  | 0.97    | 0.64  |
| Hexachlorobutadiene                            | 87683                   | 0.88    | 0.86  |
| Hexachloroethane                               | 67721                   | 0.50    | 0.85  |
| Hexane   | 110543                  | 1.00    | 1.00  |
| Isophorone                                     | 78591                   | 0.47    | 0.11  |
| Methanol                                       | 67561                   | 0.85    | 0.17  |
| Methyl bromide (Bromomethane)                  | 74839                   | 1.00    | 0.85  |
| Methyl chloride (Chloromethane)                | 74873                   | 1.00    | 0.84  |
| Methyl ethyl ketone (2-Butanone)               | 78933                   | 0.99    | 0.48  |
| Methyl isobutyl ketone (Hexone)                | 108101                  | 0.98    | 0.53  |
| Methyl methacrylate                            | 80626                   | 1.00    | 0.37  |
| Methyl tert-butyl ether                        | 1634044                 | 1.00    | 0.57  |
| Methylene chloride (Dichloromethane)           | 75092                   | 1.00    | 0.77  |
| Naphthalene                                    | 91203                   | 0.99    | 0.51  |
| Nitrobenzene                                   | 98953                   | 0.39    | 0.23  |
| Nitropropane (2-)                              | 79469                   | 0.99    | 0.44  |
| Phosgene                                       | 75445                   | 1.00    | 0.87  |
| Propionaldehyde                                | 123386                  | 1.00    | 0.41  |
| Propylene dichloride (1,2-Dichloropropane)     | 78875                   | 1.00    | 0.72  |
| Propylene oxide                                | 75569                   | 1.00    | 0.60  |
| Styrene  | 100425                  | 1.00    | 0.80  |
| Tetrachloroethane (1,1,2,2-)                   | 79345                   | 1.00    | 0.46  |
| Tetrachloroethylene (Perchloroethylene)        | 127184                  | 1.00    | 0.92  |
| Toluene  | 108883                  | 1.00    | 0.80  |
| Toluidine (o-)                                 | 95534                   | 0.15    | 0.052 |
| Trichlorobenzene (1,2,4-)                      | 120821                  | 1.00    | 0.64  |
| Trichloroethane (1,1,1-) (Methyl chloroform)   | 71556                   | 1.00    | 0.91  |
| Trichloroethane (1,1,2-) (Vinyl Trichloride)   | 79005                   | 0.98    | 0.60  |
| Trichloroethylene                              | 79016                   | 1.00    | 0.87  |
| Trichlorophenol (2,4,5-)                       | 95954                   | 1.00    | 0.086 |
| Triethylamine                                  | 121448                  | 1.00    | 0.38  |
| Trimethylpentane (2,2,4-)                      | 540841                  | 1.00    | 1.00  |
| Vinyl acetate                                  | 108054                  | 1.00    | 0.59  |
| Vinyl chloride (Chloroethylene)                | 75014                   | 1.00    | 0.97  |
| Vinylidene chloride (1,1-Dichloroethylene)     | 75354                   | 1.00    | 0.94  |
| Xylene (m-)                                    | 108383                  | 1.00    | 0.82  |
| Xylene (o-)                                    | 95476                   | 1.00    | 0.79  |
| Xylene (p-)                                    | 106423                  | 1.00    | 0.82  |

<sup>a</sup>CAS numbers refer to the Chemical Abstracts Service registry number assigned to specific compounds, isomers, or mixtures of compounds.

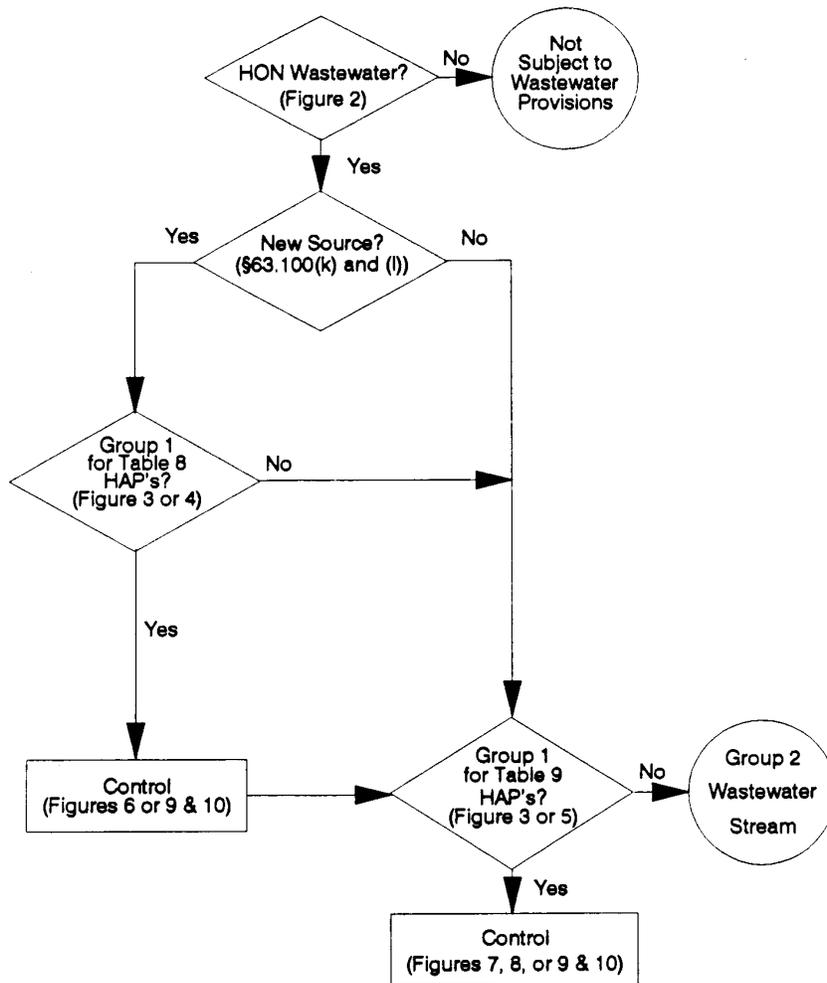
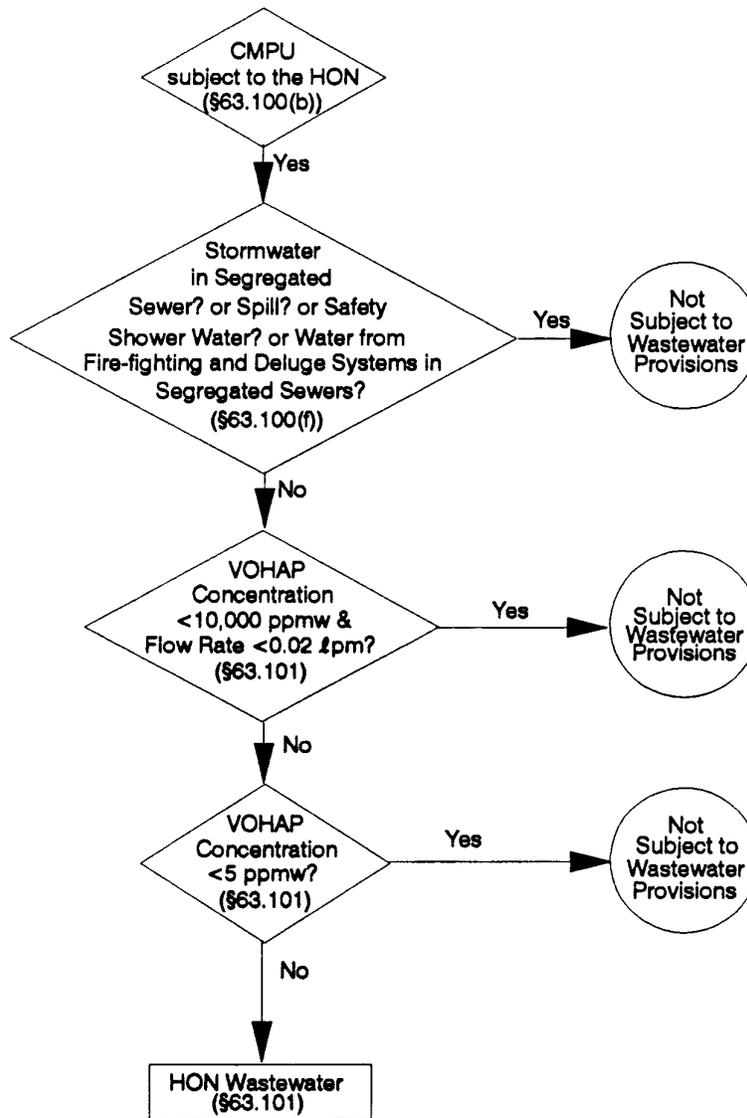


Figure 1. Overview of HON Wastewater Provisions



CMPU = Chemical Manufacturing Process Unit

Figure 2. HON Wastewater Determination

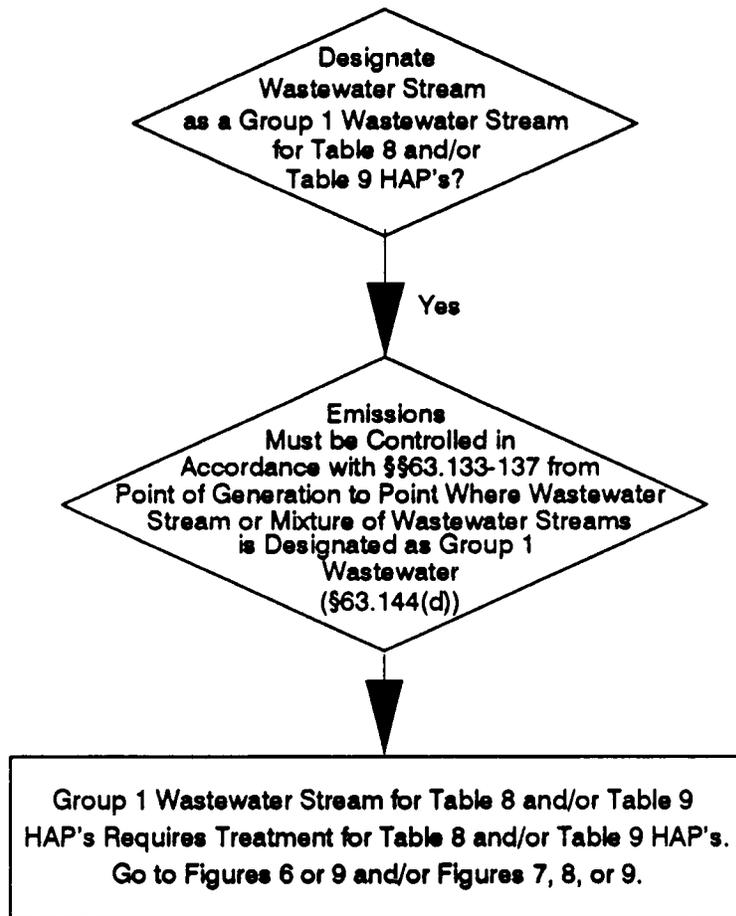


Figure 3. Designation of Group 1 Wastewater Streams (Refer to §§63.132(c) and 63.144(d))

Determine the VOHAP concentration and flow rate either (1) at the point of generation or (2) downstream of the point of generation.

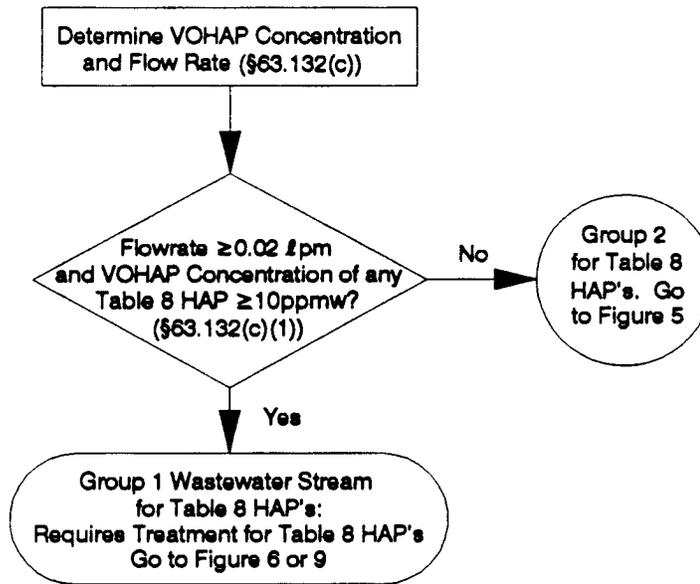


Figure 4. Group 1 and Group 2 Determinations for Wastewater Streams - Table 8 HAP's (Refer to §§63.132(d) and 63.138(b))

Determine the VOHAP concentration and flow rate either (1) at the point of generation or (2) downstream of the point of generation.

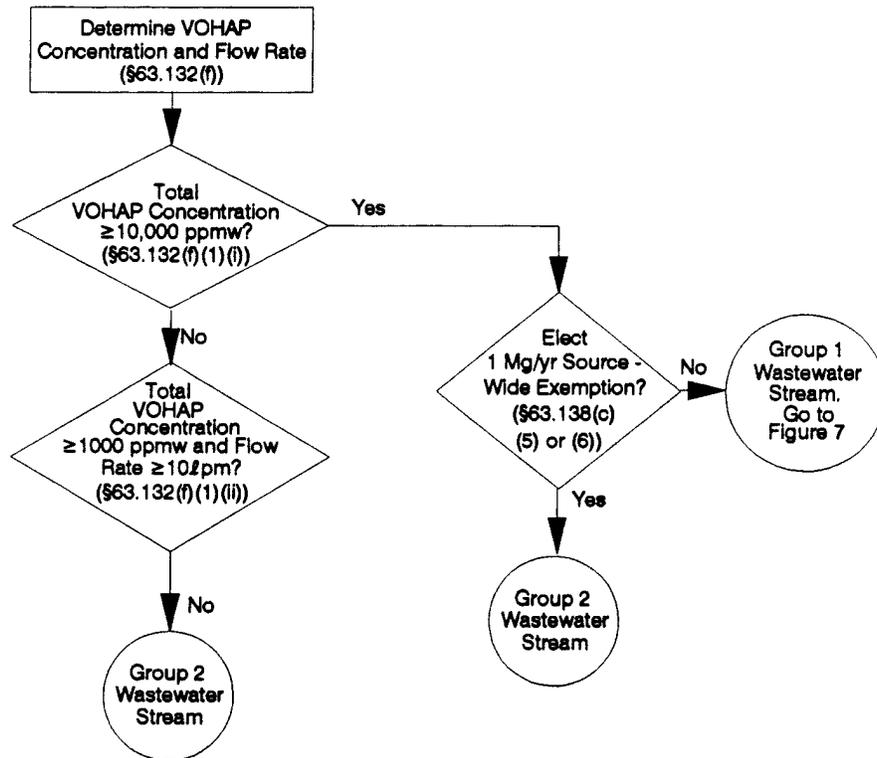


Figure 5. Group 1 and Group 2 Determinations for Wastewater Streams - Table 9 HAP's (Refer to §§63.132(f) and 63.138(c))

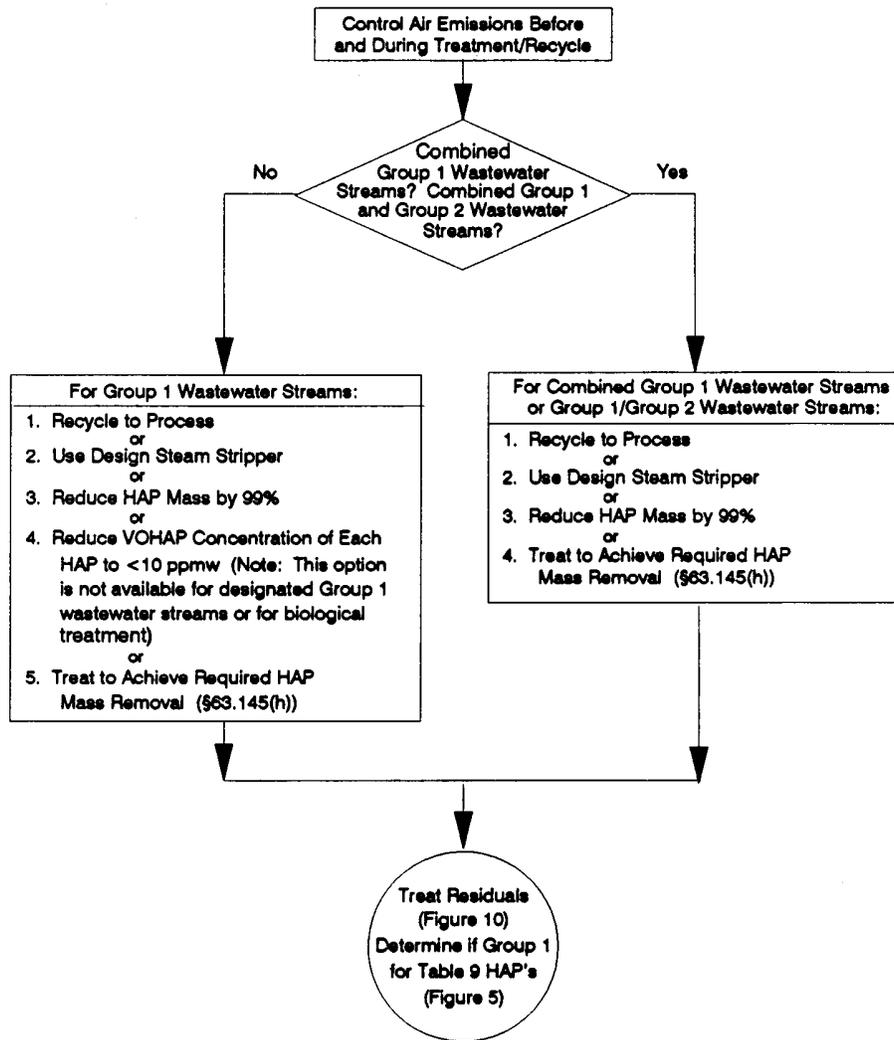


Figure 6. Compliance Options for Control of Table 8 HAP's (Refer to §63.138(b))

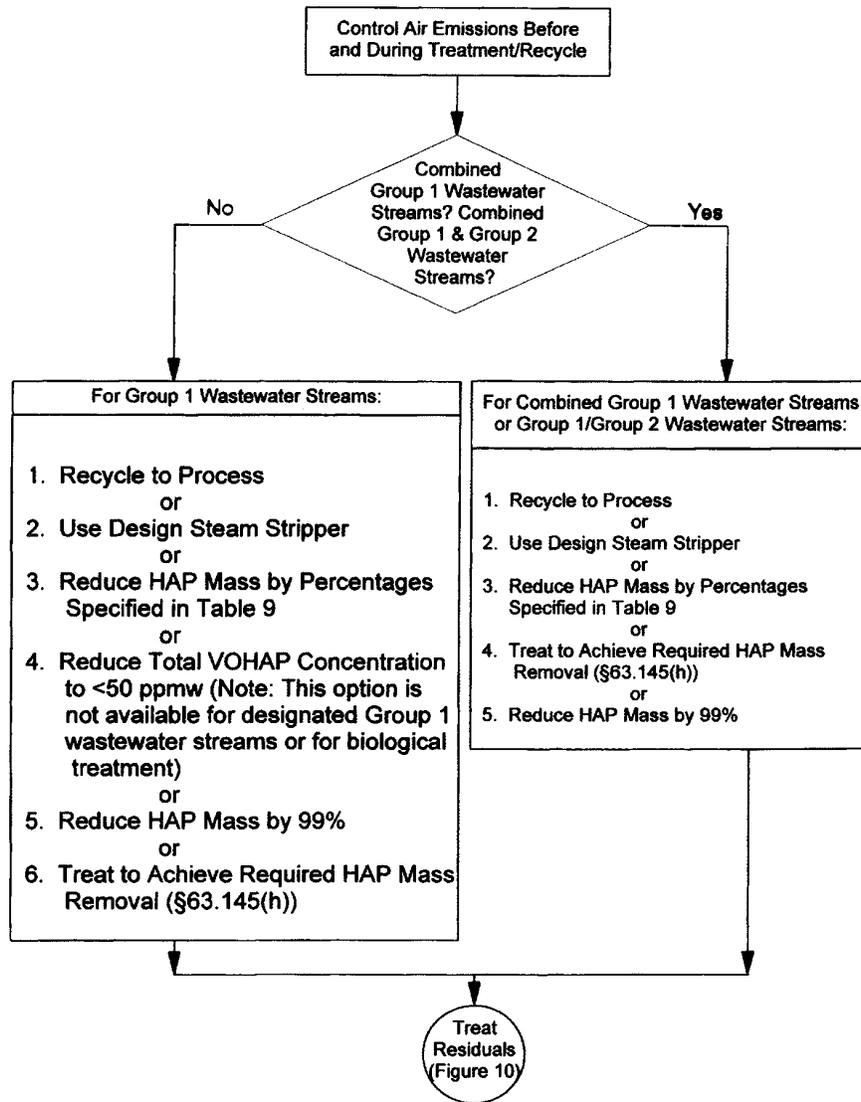


Figure 7. Compliance Options for Control of Table 9 HAP's  
(Refer to §63.138(c))

Note: Non-process wastewater streams and wastewater streams from other chemical manufacturing process units cannot be combined when using this option. This option may not be used for designated Group 1 wastewater streams.

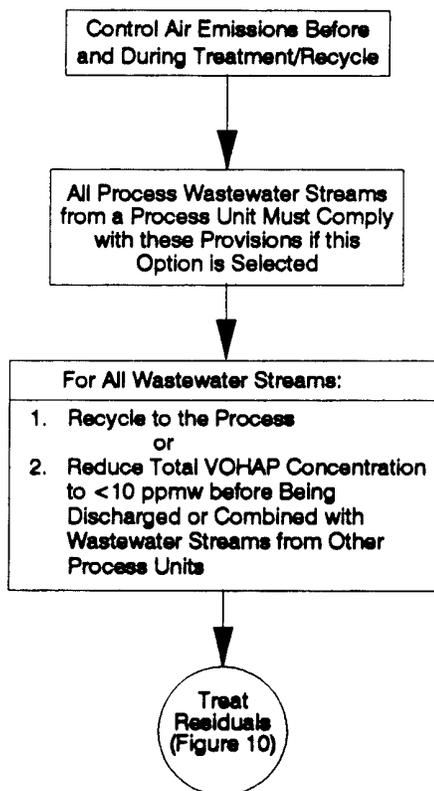
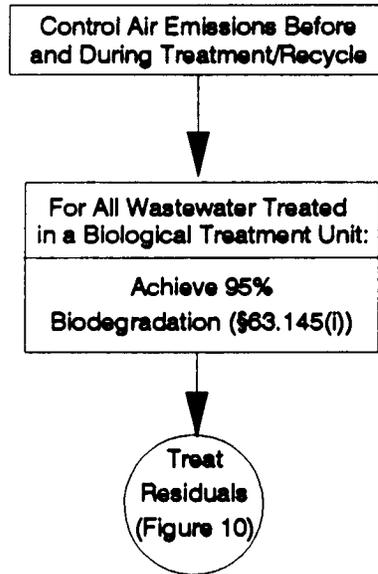
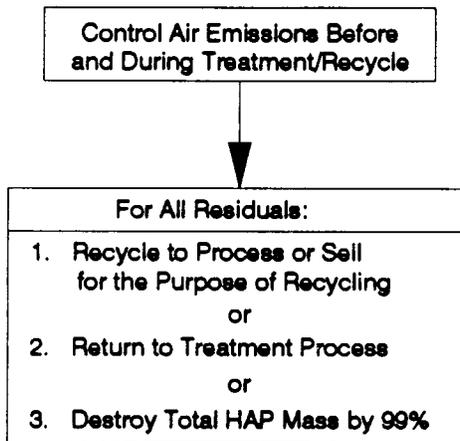


Figure 8. Process Unit Alternative Compliance Option  
(for existing sources only)  
(Refer to §63.138(d))

For control of Table 8 and Table 9 HAP's:



**Figure 9. Biological Treatment Alternative Compliance Option  
(for new and existing sources)  
(Refer to §63.138(e))**



**Figure 10. Compliance Options for Control of Residuals  
(Refer to §63.138(h))**

[59 FR 19468, Apr. 22, 1994, as amended at 59 FR 29201, June 6, 1994; 61 Fr 63629-63630, Dec. 12, 1995]

## Subpart H—National Emission Standards for Organic Hazardous Air Pollutants for Equipment Leaks

SOURCE: 59 FR 19568, Apr. 22, 1994, unless otherwise noted.

### § 63.160 Applicability and designation of source.

(a) The provisions of this subpart apply to pumps, compressors, agitators, pressure relief devices, sampling connection systems, open-ended valves or lines, valves, connectors, surge control vessels, bottoms receivers, instrumentation systems, and control devices or systems required by this subpart that are intended to operate in organic hazardous air pollutant service 300 hours or more during the calendar year within a source subject to the provisions of a specific subpart in 40 CFR part 63 that references this subpart.

(b) After the compliance date for a process unit, equipment to which this subpart applies that are also subject to the provisions of:

(1) 40 CFR part 60 will be required to comply only with the provisions of this subpart.

(2) 40 CFR part 61 will be required to comply only with the provisions of this subpart.

(c) If a process unit subject to the provisions of this subpart has equipment to which this subpart does not apply, but which is subject to a standard identified in paragraph (c)(1), (c)(2), or (c)(3) of this section, the owner or operator may elect to apply this subpart to all such equipment in the process unit. If the owner or operator elects this method of compliance, all VOC in such equipment shall be considered, for purposes of applicability and compliance with this subpart, as if it were organic hazardous air pollutant (HAP). Compliance with the provisions of this subpart, in the manner described in this paragraph, shall be deemed to constitute compliance with the standard identified in paragraph (c)(1), (c)(2), or (c)(3) of this section.

(1) 40 CFR part 60, subpart VV, GGG, or KKK; (2) 40 CFR part 61, subpart F or J; or (3) 40 CFR part 264, subpart BB or 40 CFR part 265, subpart BB.

(2) [Reserved]

(d) The provisions in § 63.1(a)(3) of subpart A of this part do not alter the provisions in paragraph (b) of this section.

(e) Except as provided in any subpart that references this subpart, lines and equipment not containing process fluids are not subject to the provisions of this subpart. Utilities, and other non-process lines, such as heating and cooling systems which do not combine their materials with those in the processes they serve, are not considered to be part of a process unit.

(f) The provisions of this subpart do not apply to research and development facilities or to bench-scale batch processes, regardless of whether the facilities or processes are located at the same plant site as a process subject to the provisions of this subpart.

[59 FR 19568, Apr. 22, 1994, as amended at 59 FR 48176, Sept. 20, 1994; 59 FR 53360, Oct. 24, 1994; 60 FR 18029, Apr. 10, 1995; 61 FR 31439, June 20, 1996]

### § 63.161 Definitions.

All terms used in this subpart shall have the meaning given them in the Act and in this section as follows, except as provided in any subpart that references this subpart.

*Batch process* means a process in which the equipment is fed intermittently or discontinuously. Processing then occurs in this equipment after which the equipment is generally emptied. Examples of industries that use batch processes include pharmaceutical production and pesticide production.

*Batch product-process equipment train* means the collection of equipment (e.g., connectors, reactors, valves, pumps, etc.) configured to produce a specific product or intermediate by a batch process.

*Bench-scale batch process* means a batch process (other than a research and development facility) that is operated on a small scale, such as one capable of being located on a laboratory bench top. This bench-scale equipment will typically include reagent feed vessels, a small reactor and associated product separator, recovery and holding equipment. These processes are only capable of producing small quantities of product.

*Bottoms receiver* means a tank that collects distillation bottoms before the stream is sent for storage or for further downstream processing.

*Closed-loop system* means an enclosed system that returns process fluid to the process and is not vented to the atmosphere except through a closed-vent system.

*Closed-purge system* means a system or combination of system and portable containers, to capture purged liquids. Containers must be covered or closed when not being filled or emptied.

*Closed-vent system* means a system that is not open to the atmosphere and that is composed of hard-piping, ductwork, connections and, if necessary, flow-inducing devices that transport gas or vapor from a piece or pieces of equipment to a control device or back into a process.

*Compliance date* means the dates specified in § 63.100(k) or § 63.100(l)(3) of subpart F of this part for process units subject to subpart F of this part; the dates specified in § 63.190(e) of subpart I of this part for process units subject to subpart I of this part. For sources subject to other subparts in 40 CFR part 63 that reference this subpart, compliance date will be defined in those subparts. However, the compliance date for § 63.170 shall be no later than 3 years after the effective date of those subparts unless otherwise specified in such other subparts.

*Connector* means flanged, screwed, or other joined fittings used to connect two pipe lines or a pipe line and a piece of equipment. A common connector is a flange. Joined fittings welded completely around the circumference of the interface are not considered connectors for the purpose of this regulation. For the purpose of reporting and recordkeeping, connector means joined fittings that are not inaccessible, glass, or glass-lined as described in § 63.174(h) of this subpart.

*Control device* means any equipment used for recovering or oxidizing organic hazardous air pollutant vapors. Such equipment includes, but is not limited to, absorbers, carbon adsorbers, condensers, flares, boilers, and process heaters.

*Double block and bleed system* means two block valves connected in series

with a bleed valve or line that can vent the line between the two block valves.

*Duct work* means a conveyance system such as those commonly used for heating and ventilation systems. It is often made of sheet metal and often has sections connected by screws or crimping. Hard-piping is not ductwork.

*Equipment* means each pump, compressor, agitator, pressure relief device, sampling connection system, open-ended valve or line, valve, connector, surge control vessel, bottoms receiver, and instrumentation system in organic hazardous air pollutant service; and any control devices or systems required by this subpart.

*First attempt at repair* means to take action for the purpose of stopping or reducing leakage of organic material to the atmosphere.

*Flow indicator* means a device which indicates whether gas flow is, or whether the valve position would allow gas flow to be, present in a line.

*Hard-piping* means pipe or tubing that is manufactured and properly installed using good engineering judgment and standards, such as ANSI B31-3.

*In food/medical service* means that a piece of equipment in organic hazardous air pollutant service contacts a process stream used to manufacture a Food and Drug Administration regulated product where leakage of a barrier fluid into the process stream would cause any of the following:

- (1) A dilution of product quality so that the product would not meet written specifications,
- (2) An exothermic reaction which is a safety hazard,
- (3) The intended reaction to be slowed down or stopped, or
- (4) An undesired side reaction to occur.

*In gas/vapor service* means that a piece of equipment in organic hazardous air pollutant service contains a gas or vapor at operating conditions.

*In heavy liquid service* means that a piece of equipment in organic hazardous air pollutant service is not in gas/vapor service or in light liquid service.

*In light liquid service* means that a piece of equipment in organic hazardous air pollutant service contains a liquid that meets the following conditions:

(1) The vapor pressure of one or more of the organic compounds is greater than 0.3 kilopascals at 20 °C,

(2) The total concentration of the pure organic compounds constituents having a vapor pressure greater than 0.3 kilopascals at 20 °C is equal to or greater than 20 percent by weight of the total process stream, and

(3) The fluid is a liquid at operating conditions.

NOTE: Vapor pressures may be determined by the methods described in 40 CFR 60.485(e)(1).

*In liquid service* means that a piece of equipment in organic hazardous air pollutant service is not in gas/vapor service.

*In organic hazardous air pollutant or in organic HAP service* means that a piece of equipment either contains or contacts a fluid (liquid or gas) that is at least 5 percent by weight of total organic HAP's as determined according to the provisions of §63.180(d) of this subpart. The provisions of §63.180(d) of this subpart also specify how to determine that a piece of equipment is not in organic HAP service.

*In vacuum service* means that equipment is operating at an internal pressure which is at least 5 kilopascals below ambient pressure.

*In volatile organic compound or in VOC service* means, for the purposes of this subpart, that:

(1) The piece of equipment contains or contacts a process fluid that is at least 10 percent VOC by weight (see 40 CFR 60.2 for the definition of VOC, and 40 CFR 60.485(d) to determine whether a piece of equipment is not in VOC service); and

(2) The piece of equipment is not in heavy liquid service as defined in 40 CFR 60.481.

*In-situ sampling systems* means non-extractive samplers or in-line samplers.

*Initial start-up* means the first time a new or reconstructed source begins production. Initial start-up does not include operation solely for testing equipment. Initial start-up does not in-

clude subsequent start-ups (as defined in this section) of process units following malfunctions or process unit shut-downs.

*Instrumentation system* means a group of equipment components used to condition and convey a sample of the process fluid to analyzers and instruments for the purpose of determining process operating conditions (e.g., composition, pressure, flow, etc.). Valves and connectors are the predominant type of equipment used in instrumentation systems; however, other types of equipment may also be included in these systems. Only valves nominally 0.5 inches and smaller, and connectors nominally 0.75 inches and smaller in diameter are considered instrumentation systems for the purposes of this subpart. Valves greater than nominally 0.5 inches and connectors greater than nominally 0.75 inches associated with instrumentation systems are not considered part of instrumentation systems and must be monitored individually.

*Liquids dripping* means any visible leakage from the seal including dripping, spraying, misting, clouding, and ice formation. Indications of liquid dripping include puddling or new stains that are indicative of an existing evaporated drip.

*Nonrepairable* means that it is technically infeasible to repair a piece of equipment from which a leak has been detected without a process unit shut-down.

*Open-ended valve or line* means any valve, except pressure relief valves, having one side of the valve seat in contact with process fluid and one side open to atmosphere, either directly or through open piping.

*Plant site* means all contiguous or adjoining property that is under common control, including properties that are separated only by a road or other public right-of-way. Common control includes properties that are owned, leased, or operated by the same entity, parent entity, subsidiary, or any combination thereof.

*Polymerizing monomer* means a molecule or compound usually containing carbon and of relatively low molecular weight and simple structure (e.g., hydrogen cyanide, acrylonitrile, styrene),

which is capable of conversion to polymers, synthetic resins, or elastomers by combination with itself due to heat generation caused by a pump mechanical seal surface, contamination by a seal fluid (e.g., organic peroxides or chemicals that will form organic peroxides), or a combination of both with the resultant polymer buildup causing rapid mechanical seal failure.

*Pressure release* means the emission of materials resulting from the system pressure being greater than the set pressure of the pressure relief device. This release can be one release or a series of releases over a short time period due to a malfunction in the process.

*Pressure relief device or valve* means a safety device used to prevent operating pressures from exceeding the maximum allowable working pressure of the process equipment. A common pressure relief device is a spring-loaded pressure relief valve. Devices that are actuated either by a pressure of less than or equal to 2.5 psig or by a vacuum are not pressure relief devices.

*Process unit* means a chemical manufacturing process unit as defined in subpart F of this part, a process subject to the provisions of subpart I of this part, or a process subject to another subpart in 40 CFR part 63 that references this subpart.

*Process unit shutdown* means a work practice or operational procedure that stops production from a process unit or part of a process unit during which it is technically feasible to clear process material from a process unit or part of a process unit consistent with safety constraints and during which repairs can be effected. An unscheduled work practice or operational procedure that stops production from a process unit or part of a process unit for less than 24 hours is not a process unit shutdown. An unscheduled work practice or operational procedure that would stop production from a process unit or part of a process unit for a shorter period of time than would be required to clear the process unit or part of the process unit of materials and start up the unit, and would result in greater emissions than delay of repair of leaking components until the next scheduled process unit shutdown, is not a process unit shutdown. The use of spare equipment

and technically feasible bypassing of equipment without stopping production are not process unit shutdowns.

*Repaired* means that equipment is adjusted, or otherwise altered, to eliminate a leak as defined in the applicable sections of this subpart.

*Sampling connection system* means an assembly of equipment within a process unit used during periods of representative operation to take samples of the process fluid. Equipment used to take non-routine grab samples is not considered a sampling connection system.

*Screwed connector* means a threaded pipe fitting where the threads are cut on the pipe wall and the fitting requires only two pieces to make the connection (i.e., the pipe and the fitting).

*Sensor* means a device that measures a physical quantity or the change in a physical quantity, such as temperature, pressure, flow rate, pH, or liquid level.

*Set pressure* means the pressure at which a properly operating pressure relief device begins to open to relieve atypical process system operating pressure.

*Start-up* means the setting in operation of a piece of equipment or a control device that is subject to this subpart.

*Surge control vessel* means feed drums, recycle drums, and intermediate vessels. Surge control vessels are used within a process unit (as defined in the specific subpart that references this subpart) when in-process storage, mixing, or management of flow rates or volumes is needed to assist in production of a product.

[59 FR 19568, Apr. 22, 1994, as amended at 59 FR 48176, Sept. 20, 1994; 60 FR 18024, 18029, Apr. 10, 1995; 61 FR 31439, June 20, 1996]

#### § 63.162 Standards: General.

(a) Compliance with this subpart will be determined by review of the records required by § 63.181 of this subpart and the reports required by § 63.182 of this subpart, review of performance test results, and by inspections.

(b)(1) An owner or operator may request a determination of alternative means of emission limitation to the requirements of §§ 63.163 through 63.170,

and §§ 63.172 through 63.174 of this subpart as provided in § 63.177.

(2) If the Administrator makes a determination that a means of emission limitation is a permissible alternative to the requirements of §§ 63.163 through 63.170, and §§ 63.172 through 63.174 of this subpart, the owner or operator shall comply with the alternative.

(c) Each piece of equipment in a process unit to which this subpart applies shall be identified such that it can be distinguished readily from equipment that is not subject to this subpart. Identification of the equipment does not require physical tagging of the equipment. For example, the equipment may be identified on a plant site plan, in log entries, or by designation of process unit boundaries by some form of weatherproof identification.

(d) Equipment that is in vacuum service is excluded from the requirements of this subpart.

(e) Equipment that is in organic HAP service less than 300 hours per calendar year is excluded from the requirements of §§ 63.163 through 63.174 of this subpart and § 63.178 of this subpart if it is identified as required in § 63.181(j) of this subpart.

(f) When each leak is detected as specified in §§ 63.163 and 63.164; §§ 63.168 and 63.169; and §§ 63.172 through 63.174 of this subpart, the following requirements apply:

(1) A weatherproof and readily visible identification, marked with the equipment identification number, shall be attached to the leaking equipment.

(2) The identification on a valve or connector may be removed after it has been monitored as specified in § 63.168(f)(3), § 63.174(e), and § 63.175(e)(7)(i)(D) of this subpart, and no leak has been detected during the follow-up monitoring.

(3) The identification on equipment, except on a valve or connector, may be removed after it has been repaired. The identification on a valve or connector may be removed after it has been monitored as specified in § 63.168(f)(3), § 63.174(e), or § 63.175(e)(7)(i)(D), and no leak has been detected during the follow-up monitoring.

[59 FR 19568, Apr. 22, 1994, as amended at 59 FR 48176, Sept. 20, 1994]

### § 63.163 Standards: Pumps in light liquid service.

(a) The provisions of this section apply to each pump that is in light liquid service.

(1) The provisions are to be implemented on the dates specified in the specific subpart in 40 CFR part 63 that references this subpart in the phases specified below:

(i) For each group of existing process units at existing sources subject to the provisions of subparts F or I of this part, the phases of the standard are:

(A) Phase I, beginning on the compliance date;

(B) Phase II, beginning no later than 1 year after the compliance date; and

(C) Phase III, beginning no later than 2½ years after the compliance date.

(ii) For new sources subject to the provisions of subparts F or I of this part, the applicable phases of the standard are:

(A) After initial start-up, comply with the Phase II requirements; and

(B) Beginning no later than 1 year after initial start-up, comply with the Phase III requirements.

(2) The owner or operator of a source subject to the provisions of subparts F or I of this part may elect to meet the requirements of a later phase during the time period specified for an earlier phase.

(3) Sources subject to other subparts in 40 CFR part 63 that reference this subpart shall comply on the dates specified in the applicable subpart.

(b)(1) The owner or operator of a process unit subject to this subpart shall monitor each pump monthly to detect leaks by the method specified in § 63.180(b) of this subpart and shall comply with the requirements of paragraphs (a) through (d) of this section, except as provided in § 63.162(b) of this subpart and paragraphs (e) through (i) of this section.

(2) The instrument reading, as determined by the method as specified in § 63.180(b) of this subpart, that defines a leak in each phase of the standard is:

(i) For Phase I, an instrument reading of 10,000 parts per million or greater.

(ii) For Phase II, an instrument reading of 5,000 parts per million or greater.

(iii) For Phase III, an instrument reading of:

(A) 5,000 parts per million or greater for pumps handling polymerizing monomers;

(B) 2,000 parts per million or greater for pumps in food/medical service; and

(C) 1,000 parts per million or greater for all other pumps.

(3) Each pump shall be checked by visual inspection each calendar week for indications of liquids dripping from the pump seal. If there are indications of liquids dripping from the pump seal, a leak is detected.

(c)(1) When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected, except as provided in paragraph (c)(3) of this section or §63.171 of this subpart.

(2) A first attempt at repair shall be made no later than 5 calendar days after the leak is detected. First attempts at repair include, but are not limited to, the following practices where practicable:

(i) Tightening of packing gland nuts.

(ii) Ensuring that the seal flush is operating at design pressure and temperature.

(3) For pumps in Phase III to which a 1,000 parts per million leak definition applies, repair is not required unless an instrument reading of 2,000 parts per million or greater is detected.

(d)(1) The owner or operator shall decide no later than the first monitoring period whether to calculate percent leaking pumps on a process unit basis or on a source-wide basis. Once the owner or operator has decided, all subsequent percent calculations shall be made on the same basis.

(2) If, in Phase III, calculated on a 6-month rolling average, the greater of either 10 percent of the pumps in a process unit or three pumps in a process unit leak, the owner or operator shall implement a quality improvement program for pumps that complies with the requirements of §63.176 of this subpart.

(3) The number of pumps at a process unit shall be the sum of all the pumps in organic HAP service, except that pumps found leaking in a continuous process unit within 1 month after start-up of the pump shall not count in

the percent leaking pumps calculation for that one monitoring period only.

(4) Percent leaking pumps shall be determined by the following equation:

$$\%P_L = ((P_L - P_S) / (P_T - P_S)) \times 100$$

where:

$\%P_L$  = Percent leaking pumps

$P_L$  = Number of pumps found leaking as determined through monthly monitoring as required in paragraphs (b)(1) and (b)(2) of this section.

$P_T$  = Total pumps in organic HAP service, including those meeting the criteria in paragraphs (e) and (f) of this section.

$P_S$  = Number of pumps leaking within 1 month of start-up during the current monitoring period.

(e) Each pump equipped with a dual mechanical seal system that includes a barrier fluid system is exempt from the requirements of paragraphs (a) through (d) of this section, provided the following requirements are met:

(1) Each dual mechanical seal system is:

(i) Operated with the barrier fluid at a pressure that is at all times greater than the pump stuffing box pressure; or

(ii) Equipped with a barrier fluid degassing reservoir that is connected by a closed-vent system to a control device that complies with the requirements of §63.172 of this subpart; or

(iii) Equipped with a closed-loop system that purges the barrier fluid into a process stream.

(2) The barrier fluid is not in light liquid service.

(3) Each barrier fluid system is equipped with a sensor that will detect failure of the seal system, the barrier fluid system, or both.

(4) Each pump is checked by visual inspection each calendar week for indications of liquids dripping from the pump seal.

(i) If there are indications of liquids dripping from the pump seal at the time of the weekly inspection, the pump shall be monitored as specified in §63.180(b) of this subpart to determine if there is a leak of organic HAP in the barrier fluid.

(ii) If an instrument reading of 1,000 parts per million or greater is measured, a leak is detected.

(5) Each sensor as described in paragraph (e)(3) of this section is observed

daily or is equipped with an alarm unless the pump is located within the boundary of an unmanned plant site.

(6)(i) The owner or operator determines, based on design considerations and operating experience, criteria applicable to the presence and frequency of drips and to the sensor that indicates failure of the seal system, the barrier fluid system, or both.

(ii) If indications of liquids dripping from the pump seal exceed the criteria established in paragraph (e)(6)(i) of this section, or if, based on the criteria established in paragraph (e)(6)(i) of this section, the sensor indicates failure of the seal system, the barrier fluid system, or both, a leak is detected.

(iii) When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected, except as provided in § 63.171 of this subpart.

(iv) A first attempt at repair shall be made no later than 5 calendar days after each leak is detected.

(f) Any pump that is designed with no externally actuated shaft penetrating the pump housing is exempt from the requirements of paragraphs (a) through (c) of this section.

(g) Any pump equipped with a closed-vent system capable of capturing and transporting any leakage from the seal or seals back to the process or to a control device that complies with the requirements of § 63.172 of this subpart is exempt from the requirements of paragraphs (b) through (e) of this section.

(h) Any pump that is located within the boundary of an unmanned plant site is exempt from the weekly visual inspection requirement of paragraphs (b)(3) and (e)(4) of this section, and the daily requirements of paragraph (e)(5) of this section, provided that each pump is visually inspected as often as practicable and at least monthly.

(i) If more than 90 percent of the pumps at a process unit meet the criteria in either paragraph (e) or (f) of this section, the process unit is exempt from the requirements of paragraph (d) of this section.

(j) Any pump that is designated, as described in § 63.181(b)(7)(i) of this subpart, as an unsafe-to-monitor pump is exempt from the requirements of paragraphs (b) through (e) of this section if:

(1) The owner or operator of the pump determines that the pump is unsafe to monitor because monitoring personnel would be exposed to an immediate danger as a consequence of complying with paragraphs (b) through (d) of this section; and

(2) The owner or operator of the pump has a written plan that requires monitoring of the pump as frequently as practical during safe-to-monitor times, but not more frequently than the periodic monitoring schedule otherwise applicable.

[59 FR 19568, Apr. 22, 1994, as amended at 59 FR 48176, Sept. 20, 1994; 61 FR 31439, June 20, 1996]

#### § 63.164 Standards: Compressors.

(a) Each compressor shall be equipped with a seal system that includes a barrier fluid system and that prevents leakage of process fluid to the atmosphere, except as provided in § 63.162(b) of this subpart and paragraphs (h) and (i) of this section.

(b) Each compressor seal system as required in paragraph (a) of this section shall be:

(1) Operated with the barrier fluid at a pressure that is greater than the compressor stuffing box pressure; or

(2) Equipped with a barrier fluid system that is connected by a closed-vent system to a control device that complies with the requirements of § 63.172 of this subpart; or

(3) Equipped with a closed-loop system that purges the barrier fluid directly into a process stream.

(c) The barrier fluid shall not be in light liquid service.

(d) Each barrier fluid system as described in paragraphs (a) through (c) of this section shall be equipped with a sensor that will detect failure of the seal system, barrier fluid system, or both.

(e)(1) Each sensor as required in paragraph (d) of this section shall be observed daily or shall be equipped with an alarm unless the compressor is located within the boundary of an unmanned plant site.

(2) The owner or operator shall determine, based on design considerations and operating experience, a criterion that indicates failure of the seal system, the barrier fluid system, or both.

(f) If the sensor indicates failure of the seal system, the barrier fluid system, or both based on the criterion determined under paragraph (e)(2) of this section, a leak is detected.

(g)(1) When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected, except as provided in §63.171 of this subpart.

(2) A first attempt at repair shall be made no later than 5 calendar days after each leak is detected.

(h) A compressor is exempt from the requirements of paragraphs (a) through (f) of this section if it is equipped with a closed-vent system capable of capturing and transporting any leakage from the seal back to the process or to a control device that complies with the requirements of §63.172 of this subpart.

(i) Any compressor that is designated, as described in §63.181(b)(2)(ii) of this subpart, to operate with an instrument reading of less than 500 parts per million above background, is exempt from the requirements of paragraphs (a) through (h) of this section if the compressor:

(1) Is demonstrated to be operating with an instrument reading of less than 500 parts per million above background, as measured by the method specified in §63.180(c) of this subpart; and

(2) Is tested for compliance with paragraph (i)(1) of this section initially upon designation, annually, and at other times requested by the Administrator.

[59 FR 19568, Apr. 22, 1994, as amended at 59 FR 48176, Sept. 20, 1994]

**§63.165 Standards: Pressure relief devices in gas/vapor service.**

(a) Except during pressure releases, each pressure relief device in gas/vapor service shall be operated with an instrument reading of less than 500 parts per million above background except as provided in paragraph (b) of this section, as measured by the method specified in §63.180(c) of this subpart.

(b)(1) After each pressure release, the pressure relief device shall be returned to a condition indicated by an instrument reading of less than 500 parts per million above background, as soon as practicable, but no later than 5 cal-

endar days after each pressure release, except as provided in §63.171 of this subpart.

(2) No later than 5 calendar days after the pressure release and being returned to organic HAP service, the pressure relief device shall be monitored to confirm the condition indicated by an instrument reading of less than 500 parts per million above background, as measured by the method specified in §63.180(c) of this subpart.

(c) Any pressure relief device that is equipped with a closed-vent system capable of capturing and transporting leakage from the pressure relief device to a control device as described in §63.172 of this subpart is exempt from the requirements of paragraphs (a) and (b) of this section.

(d)(1) Any pressure relief device that is equipped with a rupture disk upstream of the pressure relief device is exempt from the requirements of paragraphs (a) and (b) of this section, provided the owner or operator complies with the requirements in paragraph (d)(2) of this section.

(2) After each pressure release, a rupture disk shall be installed upstream of the pressure relief device as soon as practicable, but no later than 5 calendar days after each pressure release, except as provided in §63.171 of this subpart.

[59 FR 19568, Apr. 22, 1994, as amended at 59 FR 48176, Sept. 20, 1994]

**§63.166 Standards: Sampling connection systems.**

(a) Each sampling connection system shall be equipped with a closed-purge, closed-loop, or closed-vent system, except as provided in §63.162(b) of this subpart. Gases displaced during filling of the sample container are not required to be collected or captured.

(b) Each closed-purge, closed-loop, or closed-vent system as required in paragraph (a) of this section shall:

(1) Return the purged process fluid directly to the process line; or

(2) Collect and recycle the purged process fluid to a process; or

(3) Be designed and operated to capture and transport the purged process fluid to a control device that complies with the requirements of §63.172 of this subpart; or

(4) Collect, store, and transport the purged process fluid to a system or facility identified in paragraph (b)(4)(i), (ii), or (iii) of this section.

(i) A waste management unit as defined in §63.111 of subpart G of this part, if the waste management unit is subject to, and operated in compliance with the provisions of subpart G of this part applicable to group 1 wastewater streams. If the purged process fluid does not contain any organic HAP listed in Table 9 of subpart G of part 63, the waste management unit need not be subject to, and operated in compliance with the requirements of 40 CFR part 63, subpart G applicable to group 1 wastewater streams provided the facility has an NPDES permit or sends the wastewater to an NPDES permitted facility.

(ii) A treatment, storage, or disposal facility subject to regulation under 40 CFR part 262, 264, 265, or 266; or

(iii) A facility permitted, licensed, or registered by a State to manage municipal or industrial solid waste, if the process fluids are not hazardous waste as defined in 40 CFR part 261.

(c) *In-situ* sampling systems and sampling systems without purges are exempt from the requirements of paragraphs (a) and (b) of this section.

[59 FR 19568, Apr. 22, 1994, as amended at 61 FR 31439, June 20, 1996]

**§63.167 Standards: Open-ended valves or lines.**

(a)(1) Each open-ended valve or line shall be equipped with a cap, blind flange, plug, or a second valve, except as provided in §63.162(b) of this subpart and paragraphs (d) and (e) of this section.

(2) The cap, blind flange, plug, or second valve shall seal the open end at all times except during operations requiring process fluid flow through the open-ended valve or line, or during maintenance or repair.

(b) Each open-ended valve or line equipped with a second valve shall be operated in a manner such that the valve on the process fluid end is closed before the second valve is closed.

(c) When a double block and bleed system is being used, the bleed valve or line may remain open during operations that require venting the line be-

tween the block valves but shall comply with paragraph (a) of this section at all other times.

(d) Open-ended valves or lines in an emergency shutdown system which are designed to open automatically in the event of a process upset are exempt from the requirements of paragraphs (a), (b) and (c) of this section.

(e) Open-ended valves or lines containing materials which would autocatalytically polymerize or, would present an explosion, serious overpressure, or other safety hazard if capped or equipped with a double block and bleed system as specified in paragraphs (a) through (c) of this section are exempt from the requirements of paragraph (a) through (c) of this section.

[59 FR 19568, Apr. 22, 1994, as amended at 61 FR 31440, June 20, 1996]

**§63.168 Standards: Valves in gas/vapor service and in light liquid service.**

(a) The provisions of this section apply to valves that are either in gas service or in light liquid service.

(1) The provisions are to be implemented on the dates set forth in the specific subpart in 40 CFR part 63 that references this subpart as specified in paragraph (a)(1)(i), (a)(1)(ii), or (a)(1)(iii) of this section.

(i) For each group of existing process units at existing sources subject to the provisions of subpart F or I of this part, the phases of the standard are:

(A) Phase I, beginning on the compliance date;

(B) Phase II, beginning no later than 1 year after the compliance date; and

(C) Phase III, beginning no later than 2½ years after the compliance date.

(ii) For new sources subject to the provisions of subpart F or I of this part, the applicable phases of the standard are:

(A) After initial start-up, comply with the Phase II requirements; and

(B) Beginning no later than 1 year after initial start-up, comply with the Phase III requirements.

(iii) Sources subject to other subparts in 40 CFR part 63 that reference this subpart shall comply on the dates specified in the applicable subpart.

(2) The owner or operator of a source subject to this subpart may elect to

meet the requirements of a later phase during the time period specified for an earlier phase.

(3) The use of monitoring data generated before April 22, 1994 to qualify for less frequent monitoring is governed by the provisions of §63.180(b)(6) of this subpart.

(b) The owner or operator of a source subject to this subpart shall monitor all valves, except as provided in §63.162(b) of this subpart and paragraphs (h) and (i) of this section, at the intervals specified in paragraphs (c) and (d) of this section and shall comply with all other provisions of this section, except as provided in §63.171, §63.177, §63.178, and §63.179 of this subpart.

(1) The valves shall be monitored to detect leaks by the method specified in §63.180(b) of this subpart.

(2) The instrument reading that defines a leak in each phase of the standard is:

(i) For Phase I, an instrument reading of 10,000 parts per million or greater.

(ii) For Phase II, an instrument reading of 500 parts per million or greater.

(iii) For Phase III, an instrument reading of 500 parts per million or greater.

(c) In Phases I and II, each valve shall be monitored quarterly.

(d) In Phase III, the owner or operator shall monitor valves for leaks at the intervals specified below:

(1) At process units with 2 percent or greater leaking valves, calculated according to paragraph (e) of this section, the owner or operator shall either:

(i) Monitor each valve once per month; or

(ii) Within the first year after the onset of Phase III, implement a quality improvement program for valves that complies with the requirements of §63.175 (d) or (e) of this subpart and monitor quarterly.

(2) At process units with less than 2 percent leaking valves, the owner or operator shall monitor each valve once each quarter, except as provided in paragraphs (d)(3) and (d)(4) of this section.

(3) At process units with less than 1 percent leaking valves, the owner or

operator may elect to monitor each valve once every 2 quarters.

(4) At process units with less than 0.5 percent leaking valves, the owner or operator may elect to monitor each valve once every 4 quarters.

(e)(1) Percent leaking valves at a process unit shall be determined by the following equation:

$$\%V_L = (V_L / (V_T + V_C)) \times 100$$

where:

$\%V_L$  = Percent leaking valves.

$V_L$  = Number of valves found leaking excluding nonrepairables as provided in paragraph (e)(3)(i) of this section.

$V_T$  = Total valves monitored, in a monitoring period excluding valves monitored as required by (f)(3) of this section.

$V_C$  = Optional credit for removed valves =  $0.67 \times$  net number (i.e., total removed - total added) of valves in organic HAP service removed from process unit after the date set forth in §63.100(k) of subpart F for existing process units, and after the date of initial start-up for new sources. If credits are not taken, then  $V_C = 0$ .

(2) For use in determining monitoring frequency, as specified in paragraph (d) of this section, the percent leaking valves shall be calculated as a rolling average of two consecutive monitoring periods for monthly, quarterly, or semiannual monitoring programs; and as an average of any three out of four consecutive monitoring periods for annual monitoring programs.

(3)(i) Nonrepairable valves shall be included in the calculation of percent leaking valves the first time the valve is identified as leaking and nonrepairable and as required to comply with paragraph (e)(3)(ii) of this section. Otherwise, a number of nonrepairable valves (identified and included in the percent leaking calculation in a previous period) up to a maximum of 1 percent of the total number of valves in organic HAP service at a process unit may be excluded from calculation of percent leaking valves for subsequent monitoring periods.

(ii) If the number of nonrepairable valves exceeds 1 percent of the total

number of valves in organic HAP service at a process unit, the number of nonrepairable valves exceeding 1 percent of the total number of valves in organic HAP service shall be included in the calculation of percent leaking valves.

(f)(1) When a leak is detected, it shall be repaired as soon as practicable, but no later than 15 calendar days after the leak is detected, except as provided in § 63.171 of this subpart.

(2) A first attempt at repair shall be made no later than 5 calendar days after each leak is detected.

(3) When a leak is repaired, the valve shall be monitored at least once within the first 3 months after its repair.

(g) First attempts at repair include, but are not limited to, the following practices where practicable:

(1) Tightening of bonnet bolts,

(2) Replacement of bonnet bolts,

(3) Tightening of packing gland nuts, and

(4) Injection of lubricant into lubricated packing.

(h) Any valve that is designated, as described in § 63.181(b)(7)(i) of this subpart, as an unsafe-to-monitor valve is exempt from the requirements of paragraphs (b) through (f) of this section if:

(1) The owner or operator of the valve determines that the valve is unsafe to monitor because monitoring personnel would be exposed to an immediate danger as a consequence of complying with paragraphs (b) through (d) of this section; and

(2) The owner or operator of the valve has a written plan that requires monitoring of the valve as frequently as practicable during safe-to-monitor times, but not more frequently than the periodic monitoring schedule otherwise applicable.

(i) Any valve that is designated, as described in § 63.181(b)(7)(ii) of this subpart, as a difficult-to-monitor valve is exempt from the requirements of paragraphs (b) through (d) of this section if:

(1) The owner or operator of the valve determines that the valve cannot be monitored without elevating the monitoring personnel more than 2 meters above a support surface or it is not accessible at anytime in a safe manner;

(2) The process unit within which the valve is located is an existing source or

the owner or operator designates less than 3 percent of the total number of valves in a new source as difficult-to-monitor; and

(3) The owner or operator of the valve follows a written plan that requires monitoring of the valve at least once per calendar year.

(j) Any equipment located at a plant site with fewer than 250 valves in organic HAP service is exempt from the requirements for monthly monitoring and a quality improvement program specified in paragraph (d)(1) of this section. Instead, the owner or operator shall monitor each valve in organic HAP service for leaks once each quarter, or comply with paragraph (d)(3) or (d)(4) of this section except as provided in paragraphs (h) and (i) of this section.

[59 FR 19568, Apr. 22, 1994, as amended at 59 FR 48176, Sept. 20, 1994; 61 FR 31440, June 20, 1996]

**§ 63.169 Standards: Pumps, valves, connectors, and agitators in heavy liquid service; instrumentation systems; and pressure relief devices in liquid service.**

(a) Pumps, valves, connectors, and agitators in heavy liquid service, pressure relief devices in light liquid or heavy liquid service, and instrumentation systems shall be monitored within 5 calendar days by the method specified in § 63.180(b) of this subpart if evidence of a potential leak to the atmosphere is found by visual, audible, olfactory, or any other detection method. If such a potential leak is repaired as required in paragraphs (c) and (d) of this section, it is not necessary to monitor the system for leaks by the method specified in § 63.180(b) of this subpart.

(b) If an instrument reading of 10,000 parts per million or greater for agitators, 5,000 parts per million or greater for pumps handling polymerizing monomers, 2,000 parts per million or greater for pumps in food/medical service or pumps subject to § 63.163(b)(iii)(C), or 500 parts per million or greater for valves, connectors, instrumentation systems, and pressure relief devices is measured, a leak is detected.

(c)(1) When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after it

is detected, except as provided in § 63.171 of this subpart.

(2) The first attempt at repair shall be made no later than 5 calendar days after each leak is detected.

(3) For equipment identified in paragraph (a) of this section that is not monitored by the method specified in § 63.180(b) of this subpart, repaired shall mean that the visual, audible, olfactory, or other indications of a leak have been eliminated; that no bubbles are observed at potential leak sites during a leak check using soap solution; or that the system will hold a test pressure.

(d) First attempts at repair include, but are not limited to, the practices described under §§ 63.163(c)(2) and 63.168(g) of this subpart, for pumps and valves, respectively.

[59 FR 19568, Apr. 22, 1994, as amended at 59 FR 48177, Sept. 20, 1994; 60 FR 18029, Apr. 10, 1995]

**§ 63.170 Standards: Surge control vessels and bottoms receivers.**

Each surge control vessel or bottoms receiver that is not routed back to the process and that meets the conditions specified in table 2 or table 3 of this subpart shall be equipped with a closed-vent system that routes the organic vapors vented from the surge control vessel or bottoms receiver back to the process or to a control device that complies with the requirements in § 63.172 of this subpart, except as provided in § 63.162(b) of this subpart, or comply with the requirements of § 63.119(b) or (c) of subpart G of this part.

[60 FR 18024, Apr. 10, 1995]

**§ 63.171 Standards: Delay of repair.**

(a) Delay of repair of equipment for which leaks have been detected is allowed if the repair is technically infeasible without a process unit shutdown. Repair of this equipment shall occur by the end of the next process unit shutdown.

(b) Delay of repair of equipment for which leaks have been detected is allowed for equipment that is isolated from the process and that does not remain in organic HAP service.

(c) Delay of repair for valves, connectors, and agitators is also allowed if:

(1) The owner or operator determines that emissions of purged material resulting from immediate repair would be greater than the fugitive emissions likely to result from delay of repair, and

(2) When repair procedures are effected, the purged material is collected and destroyed or recovered in a control device complying with § 63.172 of this subpart.

(d) Delay of repair for pumps is also allowed if:

(1) Repair requires replacing the existing seal design with a new system that the owner or operator has determined under the provisions of § 63.176(d) of this subpart will provide better performance or:

(i) A dual mechanical seal system that meets the requirements of § 63.163(e) of this subpart,

(ii) A pump that meets the requirements of § 63.163(f) of this subpart, or

(iii) A closed-vent system and control device that meets the requirements of § 63.163(g) of this subpart; and

(2) Repair is completed as soon as practicable, but not later than 6 months after the leak was detected.

(e) Delay of repair beyond a process unit shutdown will be allowed for a valve if valve assembly replacement is necessary during the process unit shutdown, valve assembly supplies have been depleted, and valve assembly supplies had been sufficiently stocked before the supplies were depleted. Delay of repair beyond the second process unit shutdown will not be allowed unless the third process unit shutdown occurs sooner than 6 months after the first process unit shutdown.

[59 FR 19568, Apr. 22, 1994, as amended at 59 FR 48177, Sept. 20, 1994]

**§ 63.172 Standards: Closed-vent systems and control devices.**

(a) Owners or operators of closed-vent systems and control devices used to comply with provisions of this subpart shall comply with the provisions of this section, except as provided in § 63.162(b) of this subpart.

(b) Vapor recovery systems (e.g., condensers and adsorbers) shall be designed and operated to recover the organic HAP emissions or VOC emissions vented to them with an efficiency of 95 percent or greater.

(c) Enclosed combustion devices shall be designed and operated to reduce the organic HAP emissions or VOC emissions vented to them with an efficiency of 95 percent or greater or to provide a minimum residence time of 0.50 seconds at a minimum temperature of 760 °C.

(d) Flares used to comply with this subpart shall comply with the requirements of §63.11(b) of subpart A of this part.

(e) Owners or operators of control devices that are used to comply with the provisions of this subpart shall monitor these control devices to ensure that they are operated and maintained in conformance with their design.

NOTE: The intent of this provision is to ensure proper operation and maintenance of the control device.

(f) Except as provided in paragraphs (k) and (l) of this section, each closed-vent system shall be inspected according to the procedures and schedule specified in paragraphs (f)(1) and (f)(2) of this section.

(1) If the closed-vent system is constructed of hard-piping, the owner or operator shall:

(i) Conduct an initial inspection according to the procedures in paragraph (g) of this section, and

(ii) Conduct annual visual inspections for visible, audible, or olfactory indications of leaks.

(2) If the vapor collection system or closed-vent system is constructed of duct work, the owner or operator shall:

(i) Conduct an initial inspection according to the procedures in paragraph (g) of this section, and

(ii) Conduct annual inspections according to the procedures in paragraph (g) of this section.

(g) Each closed-vent system shall be inspected according to the procedures in §63.180(b) of this subpart.

(h) Leaks, as indicated by an instrument reading greater than 500 parts per million above background or by visual inspections, shall be repaired as soon

as practicable, except as provided in paragraph (i) of this section.

(1) A first attempt at repair shall be made no later than 5 calendar days after the leak is detected.

(2) Repair shall be completed no later than 15 calendar days after the leak is detected.

(i) Delay of repair of a closed-vent system for which leaks have been detected is allowed if the repair is technically infeasible without a process unit shutdown or if the owner or operator determines that emissions resulting from immediate repair would be greater than the fugitive emissions likely to result from delay of repair. Repair of such equipment shall be complete by the end of the next process unit shutdown.

(j) For each closed-vent system that contains bypass lines that could divert a vent stream away from the control device and to the atmosphere, the owner or operator shall comply with the provisions of either paragraph (j)(1) or (j)(2) of this section, except as provided in paragraph (j)(3) of this section.

(1) Install, set or adjust, maintain, and operate a flow indicator that takes a reading at least once every 15 minutes. Records shall be generated as specified in §63.118(a)(3) of subpart G of this part. The flow indicator shall be installed at the entrance to any bypass line; or

(2) Secure the bypass line valve in the closed position with a car-seal or a lock-and-key type configuration. A visual inspection of the seal or closure mechanism shall be performed at least once every month to ensure the valve is maintained in the closed position and the vent stream is not diverted through the bypass line.

(3) Equipment such as low leg drains, high point bleeds, analyzer vents, open-ended valves or lines, and pressure relief valves needed for safety purposes are not subject to this paragraph.

(k) Any parts of the closed-vent system that are designated, as described in paragraph 63.181(b)(7)(i), as unsafe to inspect are exempt from the inspection requirements of paragraphs (f)(1) and (f)(2) of this section if:

(1) The owner or operator determines that the equipment is unsafe to inspect because inspecting personnel would be

exposed to an imminent or potential danger as a consequence of complying with paragraph (f)(1) or (f)(2) of this section; and

(2) The owner or operator has a written plan that requires inspection of the equipment as frequently as practicable during safe-to-inspect times, but not more frequently than annually.

(1) Any parts of the closed-vent system that are designated, as described in § 63.181 (b)(7)(i) of this subpart, as difficult to inspect are exempt from the inspection requirements of paragraphs (f)(1) and (f)(2) of this section if:

(1) The owner or operator determines that the equipment cannot be inspected without elevating the inspecting personnel more than 2 meters above a support surface; and

(2) The owner or operator has a written plan that requires inspection of the equipment at least once every 5 years.

(m) Whenever organic HAP emissions are vented to a closed-vent system or control device used to comply with the provisions of this subpart, such system or control device shall be operating.

[59 FR 19568, Apr. 22, 1994, as amended at 59 FR 48177, Sept. 20, 1994; 61 FR 31440, June 20, 1996]

**§ 63.173 Standards: Agitators in gas/vapor service and in light liquid service.**

(a)(1) Each agitator shall be monitored monthly to detect leaks by the methods specified in § 63.180(b) of this subpart, except as provided in § 63.162(b) of this subpart.

(2) If an instrument reading of 10,000 parts per million or greater is measured, a leak is detected.

(b)(1) Each agitator shall be checked by visual inspection each calendar week for indications of liquids dripping from the agitator.

(2) If there are indications of liquids dripping from the agitator, a leak is detected.

(c)(1) When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected, except as provided in § 63.171 of this subpart.

(2) A first attempt at repair shall be made no later than 5 calendar days after each leak is detected.

(d) Each agitator equipped with a dual mechanical seal system that includes a barrier fluid system is exempt from the requirements of paragraph (a) of this section, provided the requirements specified in paragraphs (d)(1) through (d)(6) of this section are met:

(1) Each dual mechanical seal system is:

(i) Operated with the barrier fluid at a pressure that is at all times greater than the agitator stuffing box pressure; or

(ii) Equipped with a barrier fluid degassing reservoir that is connected by a closed-vent system to a control device that complies with the requirements of § 63.172 of this subpart; or

(iii) Equipped with a closed-loop system that purges the barrier fluid into a process stream.

(2) The barrier fluid is not in light liquid organic HAP service.

(3) Each barrier fluid system is equipped with a sensor that will detect failure of the seal system, the barrier fluid system, or both.

(4) Each agitator is checked by visual inspection each calendar week for indications of liquids dripping from the agitator seal.

(i) If there are indications of liquids dripping from the agitator seal at the time of the weekly inspection, the agitator shall be monitored as specified in § 63.180(b) of this subpart to determine the presence of organic HAP in the barrier fluid.

(ii) If an instrument reading of 10,000 parts per million or greater is measured, a leak is detected.

(5) Each sensor as described in paragraph (d)(3) of this section is observed daily or is equipped with an alarm unless the agitator is located within the boundary of an unmanned plant site.

(6)(i) The owner or operator determines, based on design considerations and operating experience, criteria applicable to the presence and frequency of drips and to the sensor that indicates failure of the seal system, the barrier fluid system, or both.

(ii) If indications of liquids dripping from the agitator seal exceed the criteria established in paragraph (d)(6)(i) of this section, or if, based on the criteria established in paragraph (d)(6)(i) of this section, the sensor indicates

failure of the seal system, the barrier fluid system, or both, a leak is detected.

(iii) When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected, except as provided in § 63.171 of this subpart.

(iv) A first attempt at repair shall be made no later than 5 calendar days after each leak is detected.

(e) Any agitator that is designed with no externally actuated shaft penetrating the agitator housing is exempt from paragraphs (a) through (c) of this section.

(f) Any agitator equipped with a closed-vent system capable of capturing and transporting any leakage from the seal or seals back to the process or to a control device that complies with the requirements of § 63.172 of this subpart is exempt from the requirements of paragraphs (a) through (c) of this section.

(g) Any agitator that is located within the boundary of an unmanned plant site is exempt from the weekly visual inspection requirement of paragraphs (b)(1) and (d)(4) of this section, and the daily requirements of paragraph (d)(5) of this section, provided that each agitator is visually inspected as often as practicable and at least monthly.

(h) Any agitator that is difficult-to-monitor is exempt from the requirements of paragraphs (a) through (d) of this section if:

(1) The owner or operator determines that the agitator cannot be monitored without elevating the monitoring personnel more than two meters above a support surface or it is not accessible at anytime in a safe manner;

(2) The process unit within which the agitator is located is an existing source or the owner or operator designates less than three percent of the total number of agitators in a new source as difficult-to-monitor; and

(3) The owner or operator follows a written plan that requires monitoring of the agitator at least once per calendar year.

(i) Any agitator that is obstructed by equipment or piping that prevents access to the agitator by a monitor probe is exempt from the monitoring require-

ments of paragraphs (a) through (d) of this section.

(j) Any agitator that is designated, as described in § 63.181(b)(7)(i) of this subpart, as an unsafe-to-monitor agitator is exempt from the requirements of paragraphs (b) through (d) of this section if:

(1) The owner or operator of the agitator determines that the agitator is unsafe to monitor because monitoring personnel would be exposed to an immediate danger as a consequence of complying with paragraphs (a) through (d) of this section; and

(2) The owner or operator of the agitator has a written plan that requires monitoring of the agitator as frequently as practical during safe-to-monitor times, but not more frequently than the periodic monitoring schedule otherwise applicable.

[59 FR 19568, Apr. 22, 1994, as amended at 61 FR 31440, June 20, 1996]

**§ 63.174 Standards: Connectors in gas/vapor service and in light liquid service.**

(a) The owner or operator of a process unit subject to this subpart shall monitor all connectors in gas/vapor and light liquid service, except as provided in § 63.162(b) of this subpart, and in paragraphs (f) through (h) of this section, at the intervals specified in paragraph (b) of this section.

(1) The connectors shall be monitored to detect leaks by the method specified in § 63.180(b) of this subpart.

(2) If an instrument reading greater than or equal to 500 parts per million is measured, a leak is detected.

(b) The owner or operator shall monitor for leaks at the intervals specified in either paragraph (b)(1) or (b)(2) of this section and in paragraph (b)(3) of this section.

(1) For each group of existing process units within an existing source, by no later than 12 months after the compliance date, the owner or operator shall monitor all connectors, except as provided in paragraphs (f) through (h) of this section.

(2) For new sources, within the first 12 months after initial start-up or by no later than 12 months after the date of promulgation of a specific subpart that references this subpart, whichever

is later, the owner or operator shall monitor all connectors, except as provided in paragraphs (f) through (h) of this section.

(3) After conducting the initial survey required in paragraph (b)(1) or (b)(2) of this section, the owner or operator shall perform all subsequent monitoring of connectors at the frequencies specified in paragraphs (b)(3)(i) through (b)(3)(v) of this section, except as provided in paragraph (c)(2) of this section:

(i) Once per year (i.e., 12-month period), if the percent leaking connectors in the process unit was 0.5 percent or greater during the last required annual or biennial monitoring period.

(ii) Once every 2 years, if the percent leaking connectors was less than 0.5 percent during the last required monitoring period. An owner or operator may comply with this paragraph by monitoring at least 40 percent of the connectors in the first year and the remainder of the connectors in the second year. The percent leaking connectors will be calculated for the total of all monitoring performed during the 2-year period.

(iii) If the owner or operator of a process unit in a biennial leak detection and repair program calculates less than 0.5 percent leaking connectors from the 2-year monitoring period, the owner or operator may monitor the connectors one time every 4 years. An owner or operator may comply with the requirements of this paragraph by monitoring at least 20 percent of the connectors each year until all connectors have been monitored within 4 years.

(iv) If a process unit complying with the requirements of paragraph (b) of this section using a 4-year monitoring interval program has greater than or equal to 0.5 percent but less than 1 percent leaking connectors, the owner or operator shall increase the monitoring frequency to one time every 2 years. An owner or operator may comply with the requirements of this paragraph by monitoring at least 40 percent of the connectors in the first year and the remainder of the connectors in the second year. The owner or operator may again elect to use the provisions of paragraph (b)(3)(iii) of this section

when the percent leaking connectors decreases to less than 0.5 percent.

(v) If a process unit complying with requirements of paragraph (b)(3)(iii) of this section using a 4-year monitoring interval program has 1 percent or greater leaking connectors, the owner or operator shall increase the monitoring frequency to one time per year. The owner or operator may again elect to use the provisions of paragraph (b)(3)(iii) of this section when the percent leaking connectors decreases to less than 0.5 percent.

(4) The use of monitoring data generated before April 22, 1994 to qualify for less frequent monitoring is governed by the provisions of § 63.180(b)(6).

(c)(1)(i) Except as provided in paragraph (c)(1)(ii) of this section, each connector that has been opened or has otherwise had the seal broken shall be monitored for leaks within the first 3 months after being returned to organic HAP service, including those determined to be nonrepairable prior to process unit shutdown. If the follow-up monitoring detects a leak, it shall be repaired according to the provisions of paragraph (d) of this section, unless it is determined to be nonrepairable, in which case it is counted as a nonrepairable for the purposes of paragraph (i)(2) of this section.

(ii) As an alternative to the requirements in paragraph (c)(1)(i) of this section, an owner or operator may choose to calculate percent leaking connectors for the monitoring periods described in paragraph (b) of this section, by setting the nonrepairable component,  $C_{AN}$ , in the equation in paragraph (i)(2) of this section to zero for all monitoring periods.

(iii) An owner or operator may switch alternatives described in paragraphs (c)(1)(i) and (ii) of this section at the end of the current monitoring period he is in, provided that it is reported as required in § 63.182 of this subpart and begin the new alternative in annual monitoring. The initial monitoring in the new alternative shall be completed no later than 12 months after reporting the switch.

(2) As an alternative to the requirements of paragraph (b)(3) of this section, each screwed connector 5.08 centimeters or less in nominal diameter installed in a process unit before December 31, 1992 for sources subject to subparts F and I of this part and before proposal of a subpart that references this subpart may:

(i) Comply with the requirements of § 63.169 of this subpart, and

(ii) Be monitored for leaks within the first 3 months after being returned to organic HAP service after having been opened or otherwise had the seal broken. If the follow-up monitoring detects a leak, it shall be repaired according to the provisions of paragraph (d) of this section.

(d) When a leak is detected, it shall be repaired as soon as practicable, but no later than 15 calendar days after the leak is detected, except as provided in paragraph (g) of this section and in § 63.171 of this subpart. A first attempt at repair shall be made no later than 5 calendar days after the leak is detected.

(e) If a leak is detected, the connector shall be monitored for leaks within the first 3 months after its repair.

(f) Any connector that is designated, as described in § 63.181(b)(7)(i) of this subpart, as an unsafe-to-monitor connector is exempt from the requirements of paragraph (a) of this section if:

(1) The owner or operator determines that the connector is unsafe to monitor because personnel would be exposed to an immediate danger as a result of complying with paragraphs (a) through (e) of this section; and

(2) The owner or operator has a written plan that requires monitoring of the connector as frequently as practicable during safe to monitor periods, but not more frequently than the periodic schedule otherwise applicable.

(g) Any connector that is designated, as described in § 63.181(b)(7)(iii) of this subpart, as an unsafe-to-repair connector is exempt from the requirements of paragraphs (a), (d), and (e) of this section if:

(1) The owner or operator determines that repair personnel would be exposed to an immediate danger as a con-

sequence of complying with paragraph (d) of this section; and

(2) The connector will be repaired before the end of the next scheduled process unit shutdown.

(h)(1) Any connector that is inaccessible or is ceramic or ceramic-lined (e.g., porcelain, glass, or glass-lined), is exempt from the monitoring requirements of paragraphs (a) and (c) of this section and from the recordkeeping and reporting requirements of § 63.181 and § 63.182 of this subpart. An inaccessible connector is one that is:

(i) Buried;

(ii) Insulated in a manner that prevents access to the connector by a monitor probe;

(iii) Obstructed by equipment or piping that prevents access to the connector by a monitor probe;

(iv) Unable to be reached from a wheeled scissor-lift or hydraulic-type scaffold which would allow access to connectors up to 7.6 meters (25 feet) above the ground;

(v) Inaccessible because it would require elevating the monitoring personnel more than 2 meters above a permanent support surface or would require the erection of scaffold; or

(vi) Not able to be accessed at any time in a safe manner to perform monitoring. Unsafe access includes, but is not limited to, the use of a wheeled scissor-lift on unstable or uneven terrain, the use of a motorized man-lift basket in areas where an ignition potential exists, or access would require near proximity to hazards such as electrical lines, or would risk damage to equipment.

(2) If any inaccessible or glass or glass-lined connector is observed by visual, audible, olfactory, or other means to be leaking, the leak shall be repaired as soon as practicable, but no later than 15 calendar days after the leak is detected, except as provided in § 63.171 of this subpart and paragraph (g) of this section.

(3) A first attempt at repair shall be made no later than 5 calendar days after the leak is detected.

(i) For use in determining the monitoring frequency, as specified in paragraph (b) of this section, the percent leaking connectors shall be calculated

as specified in paragraphs (i)(1) and (i)(2) of this section.

(1) For the first monitoring period, use the following equation:

$$\%C_L = C_L / (C_i + C_c) \times 100$$

where:

$\%C_L$  = Percent leaking connectors.

$C_L$  = Number of connectors measured at 500 parts per million or greater, by the method specified in § 63.180(b) of this subpart.

$C_i$  = Total number of monitored connectors in the process unit.

$C_c$  = Optional credit for removed connectors =  $0.67 \times \text{net}$  (i.e., total removed - total added) number of connectors in organic HAP service removed from the process unit after the compliance date set forth in the applicable subpart for existing process units, and after the date of initial start-up for new process units. If credits are not taken, then  $C_c = 0$ .

(2) For subsequent monitoring periods, use the following equation:

$$\%C_L = [(C_L - C_{AN}) / (C_i + C_c)] \times 100$$

where:

$\%C_L$  = Percent leaking connectors.

$C_L$  = Number of connectors, including nonreparables, measured at 500 parts per million or greater, by the method specified in § 63.180(b) of this subpart.

$C_{AN}$  = Number of allowable nonreparable connectors, as determined by monitoring required in paragraphs (b)(3) and (c) of this section, not to exceed 2 percent of the total connector population,  $C_i$ .

$C_i$  = Total number of monitored connectors, including nonreparables, in the process unit.

$C_c$  = Optional credit for removed connectors =  $0.67 \times \text{net}$  number (i.e., total removed - total added) of connectors in organic HAP service removed from the process unit after the compliance date set forth in the applicable subpart for existing process units, and after the date of initial start-up for new process units. If credits are not taken, then  $C_c = 0$ .

(j) Optional credit for removed connectors. If an owner or operator eliminates a connector subject to monitoring under paragraph (b) of this section,

the owner or operator may receive credit for elimination of the connector, as described in paragraph (i) of this section, provided the requirements in paragraphs (j)(1) through (j)(4) are met.

(1) The connector was welded after the date of proposal of the specific subpart that references this subpart.

(2) The integrity of the weld is demonstrated by monitoring it according to the procedures in § 63.180(b) of this subpart or by testing using X-ray, acoustic monitoring, hydrotesting, or other applicable method.

(3) Welds created after the date of proposal but before the date of promulgation of a specific subpart that references this subpart are monitored or tested by 3 months after the compliance date specified in the applicable subpart.

(4) Welds created after promulgation of the subpart that references this subpart are monitored or tested within 3 months after being welded.

(5) If an inadequate weld is found or the connector is not welded completely around the circumference, the connector is not considered a welded connector and is therefore not exempt from the provisions of this subpart.

[59 FR 19568, Apr. 22, 1994, as amended at 59 FR 48177, Sept. 20, 1994; 61 FR 31440, June 20, 1996]

**§ 63.175 Quality improvement program for valves.**

(a) In Phase III, an owner or operator may elect to comply with one of the alternative quality improvement programs specified in paragraphs (d) and (e) of this section. The decision to use one of these alternative provisions to comply with the requirements of § 63.168(d)(1)(ii) of this subpart must be made during the first year of Phase III for existing process units and for new process units.

(b) An owner or operator of a process unit subject to the requirements of paragraph (d) or (e) of this section shall comply with those requirements until the process unit has fewer than 2 percent leaking valves, calculated as a rolling average of 2 consecutive quarters, as specified in § 63.168(e) of this subpart.

(c) After the process unit has fewer than 2 percent leaking valves, the

owner or operator may elect to comply with the requirements in § 63.168 of this subpart, to continue to comply with the requirements in paragraph (e) (or (d), if appropriate) of this section, or comply with both the requirements in § 63.168 and § 63.175.

(1) If the owner or operator elects to continue the quality improvement program, the owner or operator is exempt from the requirements for performance trials as specified in paragraph (e)(6) of this section, or further progress as specified in paragraph (d)(4) of this section, as long as the process unit has fewer than 2 percent leaking valves calculated according to § 63.168(e).

(2) If the owner or operator elects to comply with both paragraph (e) of this section and § 63.168 of this subpart, he may also take advantage of the lower monitoring frequencies associated with lower leak rates in § 63.168 (d)(2), (d)(3), and (d)(4) of this subpart.

(3) If the owner or operator elects not to continue the quality improvement program, the program is no longer an option if the process unit again exceeds 2 percent leaking valves, and in such case, monthly monitoring will be required.

(d) The following requirements shall be met if an owner or operator elects to use a quality improvement program to demonstrate further progress:

(1) The owner or operator shall continue to comply with the requirements in § 63.168 of this subpart except each valve shall be monitored quarterly.

(2) The owner or operator shall collect the following data, and maintain records as required in § 63.181(h)(1) of this subpart, for each valve in each process unit subject to the quality improvement program:

(i) The maximum instrument reading observed in each monitoring observation before repair, the response factor for the stream if appropriate, the instrument model number, and date of the observation.

(ii) Whether the valve is in gas or light liquid service.

(iii) If a leak is detected, the repair methods used and the instrument readings after repair.

(3) The owner or operator shall continue to collect data on the valves as

long as the process unit remains in the quality improvement program.

(4) The owner or operator must demonstrate progress in reducing the percent leaking valves each quarter the process unit is subject to the requirements of paragraph (d) of this section, except as provided in paragraphs (d)(4)(ii) and (d)(4)(iii) of this section.

(i) Demonstration of progress shall mean that for each quarter there is at least a 10-percent reduction in the percent leaking valves from the percent leaking valves determined for the preceding monitoring period. The percent leaking valves shall be calculated as a rolling average of two consecutive quarters of monitoring data. The percent reduction shall be calculated using the rolling average percent leaking valves, according to the following:

$$\%LV_R = (\%LV_{AVG1} - \%LV_{AVG2} / \%LV_{AVG1} \times 100$$

where:

$\%LV_R$  = Percent leaking valve reduction.

$$\%LV_{AVG1} = (\%V_{Li} + \%V_{Li+1}) / 2.$$

$$\%LV_{AVG2} = (\%V_{Li+1} + \%V_{Li+2}) / 2.$$

where:

$$\%V_{Li}, \%V_{Li+1}, \%V_{Li+2}$$

are percent leaking valves calculated for subsequent monitoring periods, i, i+1, i+2.

(ii) An owner or operator who fails for two consecutive rolling averages to demonstrate at least a 10-percent reduction per quarter in percent leaking valves, and whose overall average percent reduction based on two or more rolling averages is less than 10 percent per quarter, shall either comply with the requirements in § 63.168(d)(1)(i) of this subpart using monthly monitoring or shall comply using a quality improvement program for technology review as specified in paragraph (e) of this section. If the owner or operator elects to comply with the requirements of paragraph (e) of this section, the schedule for performance trials and valve replacements remains as specified in paragraph (e) of this section.

(iii) As an alternative to the provisions in paragraph (d)(4)(i), an owner or operator may use the procedure specified in paragraphs (d)(4)(iii)(A) and

(d)(4)(iii)(B) of this section to demonstrate progress in reducing the percent leaking valves.

(A) The percent reduction that must be achieved each quarter shall be calculated as follows:

$$\%RR = \frac{\%V_L - 2\%}{0.10}$$

%RR = percent reduction required each quarter, as calculated according to § 63.168(e)

%V<sub>L</sub> = percent leaking valves, calculated according to § 63.168(e), at the time elected to use provisions of § 63.168(d)(1)(ii)

(B) The owner or operator shall achieve less than 2 percent leaking valves no later than 2 years after electing to use the demonstration of progress provisions in § 63.175(d) of this subpart.

(e) The following requirements shall be met if an owner or operator elects to use a quality improvement program of technology review and improvement:

(1) The owner or operator shall comply with the requirements in § 63.168 of this subpart except the requirement for monthly monitoring in § 63.168(d)(1)(i) of this subpart does not apply.

(2) The owner or operator shall collect the data specified below, and maintain records as required in § 63.181(h)(2), for each valve in each process unit subject to the quality improvement program. The data may be collected and the records may be maintained on a process unit or group of process units basis. The data shall include the following:

(i) Valve type (e.g., ball, gate, check); valve manufacturer; valve design (e.g., external stem or actuating mechanism, flanged body); materials of construction; packing material; and year installed.

(ii) Service characteristics of the stream such as operating pressure, temperature, line diameter, and corrosivity.

(iii) Whether the valve is in gas or light liquid service.

(iv) The maximum instrument readings observed in each monitoring observation before repair, response factor for the stream if adjusted, instrument

model number, and date of the observation.

(v) If a leak is detected, the repair methods used and the instrument readings after repair.

(vi) If the data will be analyzed as part of a larger analysis program involving data from other plants or other types of process units, a description of any maintenance or quality assurance programs used in the process unit that are intended to improve emission performance.

(3) The owner or operator shall continue to collect data on the valves as long as the process unit remains in the quality improvement program.

(4) The owner or operator shall inspect all valves removed from the process unit due to leaks. The inspection shall determine which parts of the valve have failed and shall include recommendations, as appropriate, for design changes or changes in specifications to reduce leak potential.

(5)(i) The owner or operator shall analyze the data collected to comply with the requirements of paragraph (e)(2) of this section to determine the services, operating or maintenance practices, and valve designs or technologies that have poorer than average emission performance and those that have better than average emission performance. The analysis shall determine if specific trouble areas can be identified on the basis of service, operating conditions or maintenance practices, equipment design, or other process specific factors.

(ii) The analysis shall also be used to identify any superior performing valve technologies that are applicable to the service(s), operating conditions, or valve designs associated with poorer than average emission performance. A superior performing valve technology is one for which a group of such valves has a leak frequency of less than 2 percent for specific applications in such a process unit. A candidate superior performing valve technology is one demonstrated or reported in the available literature or through a group study as having low emission performance and as being capable of achieving less than 2 percent leaking valves in the process unit.

(iii) The analysis shall include consideration of:

(A) The data obtained from the inspections of valves removed from the process unit due to leaks,

(B) Information from the available literature and from the experience of other plant sites that will identify valve designs or technologies and operating conditions associated with low emission performance for specific services, and

(C) Information on limitations on the service conditions for the valve design and operating conditions as well as information on maintenance procedures to ensure continued low emission performance.

(iv) The data analysis may be conducted through an inter- or intra-company program (or through some combination of the two approaches) and may be for a single process unit, a company, or a group of process units.

(v) The first analysis of the data shall be completed no later than 18 months after the start of Phase III. The first analysis shall be performed using a minimum of two quarters of data. An analysis of the data shall be done each year the process unit is in the quality improvement program.

(6) A trial evaluation program shall be conducted at each plant site for which the data analysis does not identify superior performing valve designs or technologies that can be applied to the operating conditions and services identified as having poorer than average performance, except as provided in paragraph (e)(6)(v) of this section. The trial program shall be used to evaluate the feasibility of using in the process unit the valve designs or technologies that have been identified by others as having low emission performance.

(i) The trial program shall include on-line trials of valves or operating and maintenance practices that have been identified in the available literature or in analysis by others as having the ability to perform with leak rates below 2 percent in similar services, as having low probability of failure, or as having no external actuating mechanism in contact with the process fluid. If any of the candidate superior performing valve technologies is not included in the performance trials, the

reasons for rejecting specific technologies from consideration shall be documented as required in §63.181(h)(5)(ii) of this subpart.

(ii) The number of valves in the trial evaluation program shall be the lesser of 1 percent or 20 valves for programs involving single process units and the lesser of 1 percent or 50 valves for programs involving groups of process units.

(iii) The trial evaluation program shall specify and include documentation of:

(A) The candidate superior performing valve designs or technologies to be evaluated, the stages for evaluating the identified candidate valve designs or technologies, including the estimated time period necessary to test the applicability;

(B) The frequency of monitoring or inspection of the equipment;

(C) The range of operating conditions over which the component will be evaluated; and

(D) Conclusions regarding the emission performance and the appropriate operating conditions and services for the trial valves.

(iv) The performance trials shall initially be conducted for, at least, a 6-month period beginning not later than 18 months after the start of Phase III. Not later than 24 months after the start of Phase III, the owner or operator shall have identified valve designs or technologies that, combined with appropriate process, operating, and maintenance practices, operate with low emission performance for specific applications in the process unit. The owner or operator shall continue to conduct performance trials as long as no superior performing design or technology has been identified, except as provided in paragraph (e)(6)(vi) of this section. The compilation of candidate and demonstrated superior emission performance valve designs or technologies shall be amended in the future, as appropriate, as additional information and experience is obtained.

(v) Any plant site with fewer than 400 valves and owned by a corporation with fewer than 100 total employees shall be exempt from trial evaluations of valves. Plant sites exempt from the trial evaluations of valves shall begin

the program at the start of the fourth year of Phase III.

(vi) An owner or operator who has conducted performance trials on all candidate superior emission performance technologies suitable for the required applications in the process unit may stop conducting performance trials provided that a superior performing design or technology has been demonstrated or there are no technically feasible candidate superior technologies remaining. The owner or operator shall prepare an engineering evaluation documenting the physical, chemical, or engineering basis for the judgment that the superior emission performance technology is technically infeasible or demonstrating that it would not reduce emissions.

(7) Each owner or operator who elects to use a quality improvement program for technology review and improvement shall prepare and implement a valve quality assurance program that details purchasing specifications and maintenance procedures for all valves in the process unit. The quality assurance program may establish any number of categories, or classes, of valves as needed to distinguish among operating conditions and services associated with poorer than average emission performance as well as those associated with better than average emission performance. The quality assurance program shall be developed considering the findings of the data analysis required under paragraph (e)(5) of this section, if applicable, the findings of the trial evaluation required in paragraph (e)(6) of this section, and the operating conditions in the process unit. The quality assurance program shall be reviewed and, as appropriate, updated each year as long as the process unit has 2 percent or more leaking valves.

(i) The quality assurance program shall:

(A) Establish minimum design standards for each category of valves. The design standards shall specify known critical parameters such as tolerance, manufacturer, materials of construction, previous usage, or other applicable identified critical parameters;

(B) Require that all equipment orders specify the design standard (or minimum tolerances) for the valve;

(C) Include a written procedure for bench testing of valves that specifies performance criteria for acceptance of valves and specifies criteria for the precision and accuracy of the test apparatus. All valves repaired off-line after preparation of the quality assurance plan shall be bench-tested for leaks. This testing may be conducted by the owner or operator of the process unit, by the vendor, or by a designated representative. The owner or operator shall install only those valves that have been documented through bench-testing to be nonleaking.

(D) Require that all valves repaired on-line be monitored using the method specified in §63.180(b) of this subpart for leaks for 2 successive months, after repair.

(E) Provide for an audit procedure for quality control of purchased equipment to ensure conformance with purchase specifications. The audit program may be conducted by the owner or operator of the process unit or by a designated representative.

(F) Detail off-line valve maintenance and repair procedures. These procedures shall include provisions to ensure that rebuilt or refurbished valves will meet the design specifications for the valve type and will operate such that emissions are minimized.

(ii) The quality assurance program shall be established no later than the start of the third year of Phase III for plant sites with 400 or more valves or owned by a corporation with 100 or more employees; and no later than the start of the fourth year of Phase III for plant sites with less than 400 valves and owned by a corporation with less than 100 employees.

(8) Beginning at the start of the third year of Phase III for plant sites with 400 or more valves or owned by a corporation with 100 or more employees and at the start of the fourth year of Phase III for plant sites with less than 400 valves and owned by a corporation with less than 100 employees, each valve that is replaced for any reason shall be replaced with a new or modified valve that complies with the quality assurance standards for the valve category and that is identified as superior emission performance technology.

Superior emission performance technology means valves or valve technologies identified with emission performance that, combined with appropriate process, operating, and maintenance practices, will result in less than 2 percent leaking valves for specific applications in a large population, except as provided in paragraph (e)(8)(ii) of this section.

(i) The valves shall be maintained as specified in the quality assurance program.

(ii) If a superior emission performance technology cannot be identified, then valve replacement shall be with one of (if several) the lowest emission performance technologies that has been identified for the specific application.

[59 FR 19568, Apr. 22, 1994, as amended at 60 FR 63631, Dec. 12, 1995]

**§ 63.176 Quality improvement program for pumps.**

(a) In Phase III, if, on a 6-month rolling average, the greater of either 10 percent of the pumps in a process unit (or plant site) or three pumps in a process unit (or plant site) leak, the owner or operator shall comply with the requirements of this section as specified below:

(1) Pumps that are in food/medical service or in polymerizing monomer service shall comply with all requirements except for those specified in paragraph (d)(8) of this section.

(2) Pumps that are not in food/medical or polymerizing monomer service shall comply with all requirements of this section.

(b) The owner or operator shall comply with the requirements of this section until the number of leaking pumps is less than the greater of either 10 percent of the pumps or three pumps, calculated as a 6-month rolling average, in the process unit (or plant site). Once the performance level is achieved, the owner or operator shall comply with the requirements in § 63.163 of this subpart.

(c) If in a subsequent monitoring period, the process unit (or plant site) has greater than 10 percent of the pumps leaking or three pumps leaking (calculated as a 6-month rolling average), the owner or operator shall re-

sume the quality improvement program starting at performance trials.

(d) The quality improvement program shall include the following:

(1) The owner or operator shall comply with the requirements in § 63.163 of this subpart.

(2) The owner or operator shall collect the following data, and maintain records as required in § 63.181(h)(3), for each pump in each process unit (or plant site) subject to the quality improvement program. The data may be collected and the records may be maintained on a process unit or plant site basis.

(i) Pump type (e.g., piston, horizontal or vertical centrifugal, gear, bellows); pump manufacturer; seal type and manufacturer; pump design (e.g., external shaft, flanged body); materials of construction; if applicable, barrier fluid or packing material; and year installed.

(ii) Service characteristics of the stream such as discharge pressure, temperature, flow rate, corrosivity, and annual operating hours.

(iii) The maximum instrument readings observed in each monitoring observation before repair, response factor for the stream if appropriate, instrument model number, and date of the observation.

(iv) If a leak is detected, the repair methods used and the instrument readings after repair.

(v) If the data will be analyzed as part of a larger analysis program involving data from other plants or other types of process units, a description of any maintenance or quality assurance programs used in the process unit that are intended to improve emission performance.

(3) The owner or operator shall continue to collect data on the pumps as long as the process unit (or plant site) remains in the quality improvement program.

(4) The owner or operator shall inspect all pumps or pump seals which exhibited frequent seal failures and were removed from the process unit due to leaks. The inspection shall determine the probable cause of the pump seal failure or of the pump leak and shall include recommendations, as appropriate, for design changes or

changes in specifications to reduce leak potential.

(5)(i) The owner or operator shall analyze the data collected to comply with the requirements of paragraph (d)(2) of this section to determine the services, operating or maintenance practices, and pump or pump seal designs or technologies that have poorer than average emission performance and those that have better than average emission performance. The analysis shall determine if specific trouble areas can be identified on the basis of service, operating conditions or maintenance practices, equipment design, or other process specific factors.

(ii) The analysis shall also be used to determine if there are superior performing pump or pump seal technologies that are applicable to the service(s), operating conditions, or pump or pump seal designs associated with poorer than average emission performance. A superior performing pump or pump seal technology is one with a leak frequency of less than 10 percent for specific applications in the process unit or plant site. A candidate superior performing pump or pump seal technology is one demonstrated or reported in the available literature or through a group study as having low emission performance and as being capable of achieving less than 10 percent leaking pumps in the process unit (or plant site).

(iii) The analysis shall include consideration of:

(A) The data obtained from the inspections of pumps and pump seals removed from the process unit due to leaks;

(B) Information from the available literature and from the experience of other plant sites that will identify pump designs or technologies and operating conditions associated with low emission performance for specific services; and

(C) Information on limitations on the service conditions for the pump seal technology operating conditions as well as information on maintenance procedures to ensure continued low emission performance.

(iv) The data analysis may be conducted through an inter- or intra-company program (or through some com-

ination of the two approaches) and may be for a single process unit, a plant site, a company, or a group of process units.

(v) The first analysis of the data shall be completed no later than 18 months after the start of the quality improvement program. The first analysis shall be performed using a minimum of 6 months of data. An analysis of the data shall be done each year the process unit is in the quality improvement program.

(6) A trial evaluation program shall be conducted at each plant site for which the data analysis does not identify use of superior performing pump seal technology or pumps that can be applied to the areas identified as having poorer than average performance, except as provided in paragraph (d)(6)(v) of this section. The trial program shall be used to evaluate the feasibility of using in the process unit (or plant site) the pump designs or seal technologies, and operating and maintenance practices that have been identified by others as having low emission performance.

(i) The trial program shall include on-line trials of pump seal technologies or pump designs and operating and maintenance practices that have been identified in the available literature or in analysis by others as having the ability to perform with leak rates below 10 percent in similar services, as having low probability of failure, or as having no external actuating mechanism in contact with the process fluid. If any of the candidate superior performing pump seal technologies or pumps is not included in the performance trials, the reasons for rejecting specific technologies from consideration shall be documented as required in § 63.181(h)(5)(ii).

(ii) The number of pump seal technologies or pumps in the trial evaluation program shall be the lesser of 1 percent or two pumps for programs involving single process units and the lesser of 1 percent or five pumps for programs involving a plant site or groups of process units. The minimum number of pumps or pump seal technologies in a trial program shall be one.

(iii) The trial evaluation program shall specify and include documentation of:

(A) The candidate superior performing pump seal designs or technologies to be evaluated, the stages for evaluating the identified candidate pump designs or pump seal technologies, including the time period necessary to test the applicability;

(B) The frequency of monitoring or inspection of the equipment;

(C) The range of operating conditions over which the component will be evaluated; and

(D) Conclusions regarding the emission performance and the appropriate operating conditions and services for the trial pump seal technologies or pumps.

(iv) The performance trials shall initially be conducted, at least, for a 6-month period beginning not later than 18 months after the start of the quality improvement program. No later than 24 months after the start of the quality improvement program, the owner or operator shall have identified pump seal technologies or pump designs that, combined with appropriate process, operating, and maintenance practices, operate with low emission performance for specific applications in the process unit. The owner or operator shall continue to conduct performance trials as long as no superior performing design or technology has been identified, except as provided in paragraph (d)(6)(vi) of this section. The initial list of superior emission performance pump designs or pump seal technologies shall be amended in the future, as appropriate, as additional information and experience is obtained.

(v) Any plant site with fewer than 400 valves and owned by a corporation with fewer than 100 employees shall be exempt from trial evaluations of pump seals or pump designs. Plant sites exempt from the trial evaluations of pumps shall begin the pump seal or pump replacement program at the start of the fourth year of the quality improvement program.

(vi) An owner or operator who has conducted performance trials on all alternative superior emission performance technologies suitable for the required applications in the process unit

may stop conducting performance trials provided that a superior performing design or technology has been demonstrated or there are no technically feasible alternative superior technologies remaining. The owner or operator shall prepare an engineering evaluation documenting the physical, chemical, or engineering basis for the judgment that the superior emission performance technology is technically infeasible or demonstrating that it would not reduce emissions.

(7) Each owner or operator shall prepare and implement a pump quality assurance program that details purchasing specifications and maintenance procedures for all pumps and pump seals in the process unit. The quality assurance program may establish any number of categories, or classes, of pumps as needed to distinguish among operating conditions and services associated with poorer than average emission performance as well as those associated with better than average emission performance. The quality assurance program shall be developed considering the findings of the data analysis required under paragraph (d)(5) of this section, if applicable, the findings of the trial evaluation required in paragraph (d)(6) of this section, and the operating conditions in the process unit. The quality assurance program shall be updated each year as long as the process unit has the greater of either 10 percent or more leaking pumps or has three leaking pumps.

(i) The quality assurance program shall:

(A) Establish minimum design standards for each category of pumps or pump seal technology. The design standards shall specify known critical parameters such as tolerance, manufacturer, materials of construction, previous usage, or other applicable identified critical parameters;

(B) Require that all equipment orders specify the design standard (or minimum tolerances) for the pump or the pump seal;

(C) Provide for an audit procedure for quality control of purchased equipment to ensure conformance with purchase specifications. The audit program may be conducted by the owner or operator

of the plant site or process unit or by a designated representative; and

(D) Detail off-line pump maintenance and repair procedures. These procedures shall include provisions to ensure that rebuilt or refurbished pumps and pump seals will meet the design specifications for the pump category and will operate such that emissions are minimized.

(ii) The quality assurance program shall be established no later than the start of the third year of the quality improvement program for plant sites with 400 or more valves or 100 or more employees; and no later than the start of the fourth year of the quality improvement program for plant sites with less than 400 valves and less than 100 employees.

(8) Beginning at the start of the third year of the quality improvement program for plant sites with 400 or more valves or 100 or more employees and at the start of the fourth year of the quality improvement program for plant sites with less than 400 valves and less than 100 employees, the owner or operator shall replace, as described in paragraphs (d)(8)(i) and (d)(8)(ii) of this section, the pumps or pump seals that are not superior emission performance technology with pumps or pump seals that have been identified as superior emission performance technology and that comply with the quality assurance standards for the pump category. Superior emission performance technology is that category or design of pumps or pump seals with emission performance which, when combined with appropriate process, operating, and maintenance practices, will result in less than 10 percent leaking pumps for specific applications in the process unit or plant site. Superior emission performance technology includes material or design changes to the existing pump, pump seal, seal support system, installation of multiple mechanical seals or equivalent, or pump replacement.

(i) Pumps or pump seals shall be replaced at the rate of 20 percent per year based on the total number of pumps in light liquid service. The calculated value shall be rounded to the nearest nonzero integer value. The minimum number of pumps or pump seals shall be one. Pump replacement

shall continue until all pumps subject to the requirements of § 63.163 of this subpart are pumps determined to be superior performance technology.

(ii) The owner or operator may delay replacement of pump seals or pumps with superior technology until the next planned process unit shutdown, provided the number of pump seals and pumps replaced is equivalent to the 20 percent or greater annual replacement rate.

(iii) The pumps shall be maintained as specified in the quality assurance program.

**§ 63.177 Alternative means of emission limitation: General.**

(a) Permission to use an alternative means of emission limitation under section 112(h)(3) of the Act shall be governed by the following procedures in paragraphs (b) through (e) of this section.

(b) Where the standard is an equipment, design, or operational requirement:

(1) Each owner or operator applying for permission to use an alternative means of emission limitation under § 63.6(g) of subpart A of this part shall be responsible for collecting and verifying emission performance test data for an alternative means of emission limitation.

(2) The Administrator will compare test data for the means of emission limitation to test data for the equipment, design, and operational requirements.

(3) The Administrator may condition the permission on requirements that may be necessary to ensure operation and maintenance to achieve the same emission reduction as the equipment, design, and operational requirements.

(c) Where the standard is a work practice:

(1) Each owner or operator applying for permission shall be responsible for collecting and verifying test data for an alternative means of emission limitation.

(2) For each kind of equipment for which permission is requested, the emission reduction achieved by the required work practices shall be demonstrated for a minimum period of 12 months.

(3) For each kind of equipment for which permission is requested, the emission reduction achieved by the alternative means of emission limitation shall be demonstrated.

(4) Each owner or operator applying for permission shall commit, in writing, for each kind of equipment to work practices that provide for emission reductions equal to or greater than the emission reductions achieved by the required work practices.

(5) The Administrator will compare the demonstrated emission reduction for the alternative means of emission limitation to the demonstrated emission reduction for the required work practices and will consider the commitment in paragraph (c)(4) of this section.

(6) The Administrator may condition the permission on requirements that may be necessary to ensure operation and maintenance to achieve the same or greater emission reduction as the required work practices of this subpart.

(d) An owner or operator may offer a unique approach to demonstrate the alternative means of emission limitation.

(e)(1) Manufacturers of equipment used to control equipment leaks of an organic HAP may apply to the Administrator for permission for an alternative means of emission limitation that achieves a reduction in emissions of the organic HAP achieved by the equipment, design, and operational requirements of this subpart.

(2) The Administrator will grant permission according to the provisions of paragraphs (b), (c), and (d) of this section.

**§ 63.178 Alternative means of emission limitation: Batch processes.**

(a) As an alternative to complying with the requirements of §§ 63.163 through 63.171 and §§ 63.173 through 63.176, an owner or operator of a batch process that operates in organic HAP service during the calendar year may comply with one of the standards specified in paragraphs (b) and (c) of this section, or the owner or operator may petition for approval of an alternative standard under the provisions of § 63.177 of this subpart. The alternative standards of this section provide the options

of pressure testing or monitoring the equipment for leaks. The owner or operator may switch among the alternatives provided the change is documented as specified in § 63.181.

(b) The following requirements shall be met if an owner or operator elects to use pressure testing of batch product-process equipment to demonstrate compliance with this subpart. An owner or operator who complies with the provisions of this paragraph is exempt from the monitoring provisions of § 63.163, §§ 63.168 and 63.169, and §§ 63.173 through 63.176 of this subpart.

(1) Each time equipment is reconfigured for production of a different product or intermediate, the batch product-process equipment train shall be pressure-tested for leaks before organic HAP is first fed to the equipment and the equipment is placed in organic HAP service.

(i) When the batch product-process train is reconfigured to produce a different product, pressure testing is required only for the new or disturbed equipment.

(ii) Each batch product process that operates in organic HAP service during a calendar year shall be pressure tested at least once during that calendar year.

(iii) Pressure testing is not required for routine seal breaks, such as changing hoses or filters, which are not part of the reconfiguration to produce a different product or intermediate.

(2) The batch product process equipment shall be tested either using the procedures specified in § 63.180(f) of this subpart for pressure or vacuum loss or with a liquid using the procedures specified in § 63.180(g) of this subpart.

(3)(i) For pressure or vacuum tests, a leak is detected if the rate of change in pressure is greater than 6.9 kilopascals (1 psig) in 1 hour or if there is visible, audible, or olfactory evidence of fluid loss.

(ii) For pressure tests using a liquid, a leak is detected if there are indications of liquids dripping or if there is other evidence of fluid loss.

(4)(i) If a leak is detected, it shall be repaired and the batch product-process equipment shall be retested before start-up of the process.

(ii) If a batch product-process fails the retest or the second of two consecutive pressure tests, it shall be repaired as soon as practicable, but not later than 30 calendar days after the second pressure test, provided the conditions specified in paragraph (d) of this section are met.

(c) The following requirements shall be met if an owner or operator elects to monitor the equipment to detect leaks by the method specified in § 63.180(b) of this subpart to demonstrate compliance with this subpart.

(1) The owner or operator shall comply with the requirements of §§ 63.163 through 63.170, and §§ 63.172 through 63.176 of this subpart.

(2) The equipment shall be monitored for leaks by the method specified in § 63.180(b) of this subpart when the equipment is in organic HAP service, in use with an acceptable surrogate volatile organic compound which is not an organic HAP, or is in use with any other detectable gas or vapor.

(3) The equipment shall be monitored for leaks as specified below:

(i) Each time the equipment is reconfigured for the production of a new product, the reconfigured equipment shall be monitored for leaks within 30 days of start-up of the process. This initial monitoring of reconfigured equipment shall not be included in determining percent leaking equipment in the process unit.

(ii) Connectors shall be monitored in accordance with the requirements in § 63.174 of this subpart.

(iii) Equipment other than connectors shall be monitored at the frequencies specified in table 1 of this subpart. The operating time shall be determined as the proportion of the year the batch product-process that is subject to the provisions of this subpart is operating.

(iv) The monitoring frequencies specified in table 1 of this subpart are not requirements for monitoring at specific intervals and can be adjusted to accommodate process operations. An owner or operator may monitor anytime during the specified monitoring period (e.g., month, quarter, year), provided the monitoring is conducted at a reasonable interval after completion of the last monitoring campaign. For ex-

ample, if the equipment is not operating during the scheduled monitoring period, the monitoring can be done during the next period when the process is operating.

(4) If a leak is detected, it shall be repaired as soon as practicable but not later than 15 calendar days after it is detected, except as provided in paragraph (d) of this section.

(d) Delay of repair of equipment for which leaks have been detected is allowed if the replacement equipment is not available providing the following conditions are met:

(1) Equipment supplies have been depleted and supplies had been sufficiently stocked before the supplies were depleted.

(2) The repair is made no later than 10 calendar days after delivery of the replacement equipment.

**§ 63.179 Alternative means of emission limitation: Enclosed-vented process units.**

Process units enclosed in such a manner that all emissions from equipment leaks are vented through a closed-vent system to a control device meeting the requirements of § 63.172 of this subpart are exempt from the requirements of § 63.163, through 63.171, and §§ 63.173 and 63.174 of this subpart. The enclosure shall be maintained under a negative pressure at all times while the process unit is in operation to ensure that all emissions are routed to a control device.

**§ 63.180 Test methods and procedures.**

(a) Each owner or operator subject to the provisions of this subpart shall comply with the test methods and procedures requirements provided in this section.

(b) Monitoring, as required under this subpart, shall comply with the following requirements:

(1) Monitoring shall comply with Method 21 of 40 CFR part 60, appendix A.

(2)(i) Except as provided for in paragraph (b)(2)(ii) of this section, the detection instrument shall meet the performance criteria of Method 21 of 40 CFR part 60, appendix A, except the instrument response factor criteria in Section 3.1.2(a) of Method 21 shall be

for the average composition of the process fluid not each individual VOC in the stream. For process streams that contain nitrogen, water, air, or other inerts which are not organic HAP's or VOC's, the average stream response factor may be calculated on an inert-free basis. The response factor may be determined at any concentration for which monitoring for leaks will be conducted.

(ii) If no instrument is available at the plant site that will meet the performance criteria specified in paragraph (b)(2)(i) of this section, the instrument readings may be adjusted by multiplying by the average response factor of the process fluid, calculated on an inert-free basis as described in paragraph (b)(2)(i) of this section.

(3) The instrument shall be calibrated before use on each day of its use by the procedures specified in Method 21 of 40 CFR part 60, appendix A.

(4) Calibration gases shall be:

(i) Zero air (less than 10 parts per million of hydrocarbon in air); and

(ii) (A) For Phase I, a mixture of methane in air at a concentration of approximately, but less than, 10,000 parts per million.

(B) For Phase II, a mixture of methane and air at a concentration of approximately, but less than, 10,000 parts per million for agitators, 5,000 parts per million for pumps, and 500 parts per million for all other equipment, except as provided in paragraph (b)(4)(iii) of this section.

(C) For Phase III, a mixture of methane and air at a concentration of approximately, but less than, 10,000 parts per million methane for agitators; 2,000 parts per million for pumps in food/medical service; 5,000 parts per million for pumps in polymerizing monomer service; 1,000 parts per million for all other pumps; and 500 parts per million for all other equipment, except as provided in paragraph (b)(4)(iii) of this section.

(iii) The instrument may be calibrated at a higher methane concentration than the concentration specified for that piece of equipment. The concentration of the calibration gas may exceed the concentration specified as a leak by no more than 2,000 parts per million. If the monitoring instrument's

design allows for multiple calibration scales, then the lower scale shall be calibrated with a calibration gas that is no higher than 2,000 parts per million above the concentration specified as a leak and the highest scale shall be calibrated with a calibration gas that is approximately equal to 10,000 parts per million. If only one scale on an instrument will be used during monitoring, the owner or operator need not calibrate the scales that will not be used during that day's monitoring.

(5) Monitoring shall be performed when the equipment is in organic HAP service, in use with an acceptable surrogate volatile organic compound which is not an organic HAP, or is in use with any other detectable gas or vapor.

(6) Monitoring data that do not meet the criteria specified in paragraphs (b)(1) through (b)(5) of this section may be used to qualify for less frequent monitoring under the provisions in § 63.168(d)(2) and (d)(3) or § 63.174(b)(3)(ii) or (b)(3)(iii) of this subpart provided the data meet the conditions specified in paragraphs (b)(6)(i) and (b)(6)(ii) of this section.

(i) The data were obtained before April 22, 1994.

(ii) The departures from the criteria specified in paragraphs (b)(1) through (b)(5) of this section or from the specified monitoring frequency of § 63.168(c) are minor and do not significantly affect the quality of the data. Examples of minor departures are monitoring at a slightly different frequency (such as every six weeks instead of monthly or quarterly), following the performance criteria of section 3.1.2(a) of Method 21 of appendix A of 40 CFR part 60 instead of paragraph (b)(2) of this section, or monitoring at a different leak definition if the data would indicate the presence or absence of a leak at the concentration specified in this subpart. Failure to use a calibrated instrument is not considered a minor departure.

(c) When equipment is monitored for compliance as required in §§ 63.164(i), 63.165(a), and 63.172(f) of this subpart or when equipment subject to a leak definition of 500 ppm is monitored for leaks, the monitoring shall comply with the following requirements:

(1) The requirements of paragraphs (b) (1) through (4) of this section shall apply.

(2) The background level shall be determined, as set forth in Method 21 of 40 CFR part 60, appendix A.

(3) The instrument probe shall be traversed around all potential leak interfaces as close to the interface as possible as described in Method 21 of 40 CFR part 60, appendix A.

(4) The arithmetic difference between the maximum concentration indicated by the instrument and the background level is compared with 500 parts per million for determining compliance.

(d)(1) Each piece of equipment within a process unit that can reasonably be expected to contain equipment in organic HAP service is presumed to be in organic HAP service unless an owner or operator demonstrates that the piece of equipment is not in organic HAP service. For a piece of equipment to be considered not in organic HAP service, it must be determined that the percent organic HAP content can be reasonably expected not to exceed 5 percent by weight on an annual average basis. For purposes of determining the percent organic HAP content of the process fluid that is contained in or contacts equipment, Method 18 of 40 CFR part 60, appendix A shall be used.

(2)(i) An owner or operator may use good engineering judgment rather than the procedures in paragraph (d)(1) of this section to determine that the percent organic HAP content does not exceed 5 percent by weight. When an owner or operator and the Administrator do not agree on whether a piece of equipment is not in organic HAP service, however, the procedures in paragraph (d)(1) of this section shall be used to resolve the disagreement.

(ii) Conversely, the owner or operator may determine that the organic HAP content of the process fluid does not exceed 5 percent by weight by, for example, accounting for 98 percent of the content and showing that organic HAP is less than 3 percent.

(3) If an owner or operator determines that a piece of equipment is in organic HAP service, the determination can be revised after following the procedures in paragraph (d)(1) of this section, or by documenting that a

change in the process or raw materials no longer causes the equipment to be in organic HAP service.

(4) Samples used in determining the percent organic HAP content shall be representative of the process fluid that is contained in or contacts the equipment.

(e) When a flare is used to comply with § 63.172(d) of this subpart, the compliance determination shall be conducted using Method 22 of 40 CFR part 60, appendix A to determine visible emissions.

(f) The following procedures shall be used to pressure test batch product-process equipment for pressure or vacuum loss to demonstrate compliance with the requirements of § 63.178(b)(3)(i) of this subpart.

(1) The batch product-process equipment train shall be pressurized with a gas to a pressure less than the set pressure of any safety relief devices or valves or to a pressure slightly above the operating pressure of the equipment, or alternatively, the equipment shall be placed under a vacuum.

(2) Once the test pressure is obtained, the gas source or vacuum source shall be shut off.

(3) The test shall continue for not less than 15 minutes unless it can be determined in a shorter period of time that the allowable rate of pressure drop or of pressure rise was exceeded. The pressure in the batch product-process equipment shall be measured after the gas or vacuum source is shut off and at the end of the test period. The rate of change in pressure in the batch product-process equipment shall be calculated using the following equation:

$$\Delta \frac{P}{t} = \frac{(P_f - P_i)}{(t_f - t_i)}$$

where:

$\Delta P/t$ =Change in pressure, psig/hr.

$P_f$ =Final pressure, psig.

$P_i$ =Initial pressure, psig.

$t_f - t_i$ =Elapsed time, hours.

(4) The pressure shall be measured using a pressure measurement device (gauge, manometer, or equivalent) which has a precision of  $\pm 2.5$  millimeter mercury in the range of test pressure and is capable of measuring pressures

up to the relief set pressure of the pressure relief device. If such a pressure measurement device is not reasonably available, the owner or operator shall use a pressure measurement device with a precision of at least +10 percent of the test pressure of the equipment and shall extend the duration of the test for the time necessary to detect a pressure loss or rise that equals a rate of one psig per hour.

(5) An alternative procedure may be used for leak testing the equipment if the owner or operator demonstrates the alternative procedure is capable of detecting a pressure loss or rise.

(g) The following procedures shall be used to pressure-test batch product-process equipment using a liquid to demonstrate compliance with the requirements of § 63.178(b)(3)(ii) of this subpart.

(1) The batch product-process equipment train, or section of the train, shall be filled with the test liquid (e.g., water, alcohol) until normal operating pressure is obtained. Once the equipment is filled, the liquid source shall be shut off.

(2) The test shall be conducted for a period of at least 60 minutes, unless it can be determined in a shorter period of time that the test is a failure.

(3) Each seal in the equipment being tested shall be inspected for indications of liquid dripping or other indications of fluid loss. If there are any indications of liquids dripping or of fluid loss, a leak is detected.

(4) An alternative procedure may be used for leak testing the equipment, if the owner or operator demonstrates the alternative procedure is capable of detecting losses of fluid.

[59 FR 19568, Apr. 22, 1994, as amended at 59 FR 48177, Sept. 20, 1994; 61 FR 31440, June 20, 1996]

#### **§ 63.181 Recordkeeping requirements.**

(a) An owner or operator of more than one process unit subject to the provisions of this subpart may comply with the recordkeeping requirements for these process units in one recordkeeping system if the system identifies each record by process unit and the program being implemented (e.g., quarterly monitoring, quality improvement) for each type of equipment. All

records and information required by this section shall be maintained in a manner that can be readily accessed at the plant site. This could include physically locating the records at the plant site or accessing the records from a central location by computer at the plant site.

(b) Except as provided in paragraph (e) of this section, the following information pertaining to all equipment in each process unit subject to the requirements in §§ 63.162 through 63.174 of this subpart shall be recorded:

(1)(i) A list of identification numbers for equipment (except connectors exempt from monitoring and recordkeeping identified in § 63.174 of this subpart and instrumentation systems) subject to the requirements of this subpart. Connectors need not be individually identified if all connectors in a designated area or length of pipe subject to the provisions of this subpart are identified as a group, and the number of connectors subject is indicated. With respect to connectors, the list shall be complete no later than the completion of the initial survey required by § 63.174 (b)(1) or (b)(2) of this subpart.

(ii) A schedule by process unit for monitoring connectors subject to the provisions of § 63.174(a) of this subpart and valves subject to the provisions of § 63.168(d) of this subpart.

(iii) Physical tagging of the equipment to indicate that it is in organic HAP service is not required. Equipment subject to the provisions of this subpart may be identified on a plant site plan, in log entries, or by other appropriate methods.

(2)(i) A list of identification numbers for equipment that the owner or operator elects to equip with a closed-vent system and control device, under the provisions of § 63.163(g), § 63.164(h), § 63.165(c), or § 63.173(f) of this subpart.

(ii) A list of identification numbers for compressors that the owner or operator elects to designate as operating with an instrument reading of less than 500 parts per million above background, under the provisions of § 63.164(i) of this subpart.

(iii) Identification of surge control vessels or bottoms receivers subject to the provisions of this subpart that the

owner or operator elects to equip with a closed-vent system and control device, under the provisions of § 63.170 of this subpart.

(3)(i) A list of identification numbers for pressure relief devices subject to the provisions in § 63.165(a) of this subpart.

(ii) A list of identification numbers for pressure relief devices equipped with rupture disks, under the provisions of § 63.165(d) of this subpart.

(4) Identification of instrumentation systems subject to the provisions of this subpart. Individual components in an instrumentation system need not be identified.

(5) Identification of screwed connectors subject to the requirements of § 63.174(c)(2) of this subpart. Identification can be by area or grouping as long as the total number within each group or area is recorded.

(6) The following information shall be recorded for each dual mechanical seal system:

(i) Design criteria required in §§ 63.163(e)(6)(i), 63.164(e)(2), and 63.173(d)(6)(i) of this subpart and an explanation of the design criteria; and

(ii) Any changes to these criteria and the reasons for the changes.

(7) The following information pertaining to all pumps subject to the provisions of § 63.163(j), valves subject to the provisions of § 63.168(h) and (i) of this subpart, agitators subject to the provisions of § 63.173(h) through (j), and connectors subject to the provisions of § 63.174(f) through (h) of this subpart shall be recorded:

(i) Identification of equipment designated as unsafe to monitor, difficult to monitor, or unsafe to inspect and the plan for monitoring or inspecting this equipment.

(ii) A list of identification numbers for the equipment that is designated as difficult to monitor, an explanation of why the equipment is difficult to monitor, and the planned schedule for monitoring this equipment.

(iii) A list of identification numbers for connectors that are designated as unsafe to repair and an explanation why the connector is unsafe to repair.

(8)(i) A list of valves removed from and added to the process unit, as described in § 63.168(e)(1) of this subpart,

if the net credits for removed valves is expected to be used.

(ii) A list of connectors removed from and added to the process unit, as described in § 63.174(i)(1) of this subpart, and documentation of the integrity of the weld for any removed connectors, as required in § 63.174(j) of this subpart. This is not required unless the net credits for removed connectors is expected to be used.

(9)(i) For batch process units that the owner or operator elects to monitor as provided under § 63.178(c) of this subpart, a list of equipment added to batch product process units since the last monitoring period required in § 63.178(c)(3)(ii) and (3)(iii) of this subpart.

(ii) Records demonstrating the proportion of the time during the calendar year the equipment is in use in a batch process that is subject to the provisions of this subpart. Examples of suitable documentation are records of time in use for individual pieces of equipment or average time in use for the process unit. These records are not required if the owner or operator does not adjust monitoring frequency by the time in use, as provided in § 63.178(c)(3)(iii) of this subpart.

(c) For visual inspections of equipment subject to the provisions of this subpart (e.g., § 63.163(b)(3), § 63.163(e)(4)(i)), the owner or operator shall document that the inspection was conducted and the date of the inspection. The owner or operator shall maintain records as specified in paragraph (d) of this section for leaking equipment identified in this inspection, except as provided in paragraph (e) of this section. These records shall be retained for 2 years.

(d) When each leak is detected as specified in §§ 63.163 and 63.164; §§ 63.168 and 63.169; and §§ 63.172 through 63.174 of this subpart, the following information shall be recorded and kept for 2 years:

(1) The instrument and the equipment identification number and the operator name, initials, or identification number.

(2) The date the leak was detected and the date of first attempt to repair the leak.

(3) The date of successful repair of the leak.

(4) Maximum instrument reading measured by Method 21 of 40 CFR part 60, appendix A after it is successfully repaired or determined to be nonreparable.

(5) "Repair delayed" and the reason for the delay if a leak is not repaired within 15 calendar days after discovery of the leak.

(i) The owner or operator may develop a written procedure that identifies the conditions that justify a delay of repair. The written procedures may be included as part of the startup/shutdown/malfunction plan, required by §63.6(e)(3), for the source or may be part of a separate document that is maintained at the plant site. In such cases, reasons for delay of repair may be documented by citing the relevant sections of the written procedure.

(ii) If delay of repair was caused by depletion of stocked parts, there must be documentation that the spare parts were sufficiently stocked on-site before depletion and the reason for depletion.

(6) Dates of process unit shutdowns that occur while the equipment is unrepaired.

(7)(i) Identification, either by list, location (area or grouping), or tagging of connectors disturbed since the last monitoring period required in §63.174(b) of this subpart, as described in §63.174(c)(1) of this subpart.

(ii) The date and results of follow-up monitoring as required in §63.174(c) of this subpart. If identification of disturbed connectors is made by location, then all connectors within the designated location shall be monitored.

(8) The date and results of the monitoring required in §63.178(c)(3)(i) of this subpart for equipment added to a batch process unit since the last monitoring period required in §63.178(c)(3)(ii) and (c)(3)(iii) of this subpart. If no leaking equipment is found in this monitoring, the owner or operator shall record that the inspection was performed. Records of the actual monitoring results are not required.

(9) Copies of the periodic reports as specified in §63.182(d) of this subpart, if records are not maintained on a computerized database capable of generating summary reports from the records.

(e) The owner or operator of a batch product process who elects to pressure

test the batch product process equipment train to demonstrate compliance with this subpart is exempt from the requirements of paragraphs (b), (c), (d), and (f) of this section. Instead, the owner or operator shall maintain records of the following information:

(1) The identification of each product, or product code, produced during the calendar year. It is not necessary to identify individual items of equipment in a batch product process equipment train.

(2) [Reserved]

(3) Physical tagging of the equipment to identify that it is in organic HAP service and subject to the provisions of this subpart is not required. Equipment in a batch product process subject to the provisions of this subpart may be identified on a plant site plan, in log entries, or by other appropriate methods.

(4) The dates of each pressure test required in §63.178(b) of this subpart, the test pressure, and the pressure drop observed during the test.

(5) Records of any visible, audible, or olfactory evidence of fluid loss.

(6) When a batch product process equipment train does not pass two consecutive pressure tests, the following information shall be recorded in a log and kept for 2 years:

(i) The date of each pressure test and the date of each leak repair attempt.

(ii) Repair methods applied in each attempt to repair the leak.

(iii) The reason for the delay of repair.

(iv) The expected date for delivery of the replacement equipment and the actual date of delivery of the replacement equipment.

(v) The date of successful repair.

(f) The dates and results of each compliance test required for compressors subject to the provisions in §63.164(i) and the dates and results of the monitoring following a pressure release for each pressure relief device subject to the provisions in §§63.165 (a) and (b) of this subpart. The results shall include:

(1) The background level measured during each compliance test.

(2) The maximum instrument reading measured at each piece of equipment during each compliance test.

(g) The owner or operator shall maintain records of the information specified in paragraphs (g)(1) through (g)(3) of this section for closed-vent systems and control devices subject to the provisions of § 63.172 of this subpart. The records specified in paragraph (g)(1) of this section shall be retained for the life of the equipment. The records specified in paragraphs (g)(2) and (g)(3) of this section shall be retained for 2 years.

(1) The design specifications and performance demonstrations specified in paragraphs (g)(1)(i) through (g)(1)(iv) of this section.

(i) Detailed schematics, design specifications of the control device, and piping and instrumentation diagrams.

(ii) The dates and descriptions of any changes in the design specifications.

(iii) The flare design (i.e., steam-assisted, air-assisted, or non-assisted) and the results of the compliance demonstration required by § 63.11(b) of subpart A of this part.

(iv) A description of the parameter or parameters monitored, as required in § 63.172(e) of this subpart, to ensure that control devices are operated and maintained in conformance with their design and an explanation of why that parameter (or parameters) was selected for the monitoring.

(2) Records of operation of closed-vent systems and control devices.

(i) Dates and durations when the closed-vent systems and control devices required in §§ 63.163 through 63.166, and § 63.170 of this subpart are not operated as designed as indicated by the monitored parameters, including periods when a flare pilot light system does not have a flame.

(ii) Dates and durations during which the monitoring system or monitoring device is inoperative.

(iii) Dates and durations of start-ups and shutdowns of control devices required in §§ 63.163 through 63.166, and § 63.170 of this subpart.

(3) Records of inspections of closed-vent systems subject to the provisions of § 63.172 of this subpart.

(i) For each inspection conducted in accordance with the provisions of § 63.172(f)(1) or (f)(2) of this subpart during which no leaks were detected, a record that the inspection was per-

formed, the date of the inspection, and a statement that no leaks were detected.

(ii) For each inspection conducted in accordance with the provisions of § 63.172(f)(1) or (f)(2) of this subpart during which leaks were detected, the information specified in paragraph (d) of this section shall be recorded.

(h) Each owner or operator of a process unit subject to the requirements of §§ 63.175 and 63.176 of this subpart shall maintain the records specified in paragraphs (h)(1) through (h)(9) of this section for the period of the quality improvement program for the process unit.

(1) For owners or operators who elect to use a reasonable further progress quality improvement program, as specified in § 63.175(d) of this subpart:

(i) All data required in § 63.175(d)(2) of this subpart.

(ii) The percent leaking valves observed each quarter and the rolling average percent reduction observed in each quarter.

(iii) The beginning and ending dates while meeting the requirements of § 63.175(d) of this subpart.

(2) For owners or operators who elect to use a quality improvement program of technology review and improvement, as specified in § 63.175(e) of this subpart:

(i) All data required in § 63.175(e)(2) of this subpart.

(ii) The percent leaking valves observed each quarter.

(iii) Documentation of all inspections conducted under the requirements of § 63.175(e)(4) of this subpart, and any recommendations for design or specification changes to reduce leak frequency.

(iv) The beginning and ending dates while meeting the requirements of § 63.175(e) of this subpart.

(3) For owners or operators subject to the requirements of the pump quality improvement program as specified in § 63.176 of this subpart:

(i) All data required in § 63.176(d)(2) of this subpart.

(ii) The rolling average percent leaking pumps.

(iii) Documentation of all inspections conducted under the requirements of § 63.176(d)(4) of this subpart, and any

recommendations for design or specification changes to reduce leak frequency.

(iv) The beginning and ending dates while meeting the requirements of § 63.176(d) of this subpart.

(4) If a leak is not repaired within 15 calendar days after discovery of the leak, the reason for the delay and the expected date of successful repair.

(5) Records of all analyses required in §§ 63.175(e) and 63.176(d) of this subpart. The records will include the following:

(i) A list identifying areas associated with poorer than average performance and the associated service characteristics of the stream, the operating conditions and maintenance practices.

(ii) The reasons for rejecting specific candidate superior emission performing valve or pump technology from performance trials.

(iii) The list of candidate superior emission performing valve or pump technologies, and documentation of the performance trial program items required under §§ 63.175(e)(6)(iii) and 63.176(d)(6)(iii) of this subpart.

(iv) The beginning date and duration of performance trials of each candidate superior emission performing technology.

(6) All records documenting the quality assurance program for valves or pumps as specified in §§ 63.175(e)(7) and 63.176(d)(7) of this subpart.

(7) Records indicating that all valves or pumps replaced or modified during the period of the quality improvement program are in compliance with the quality assurance requirements in § 63.175(e)(7) and § 63.176(d)(7) of this subpart.

(8) Records documenting compliance with the 20 percent or greater annual replacement rate for pumps as specified in § 63.176(d)(8) of this subpart.

(9) Information and data to show the corporation has fewer than 100 employees, including employees providing professional and technical contracted services.

(i) Information, data, and analysis used to determine that a piece of equipment or process unit is in heavy liquid service shall be recorded. Such a determination shall include an analysis or demonstration that the process fluids do not meet the criteria of "in light

liquid or gas service." Examples of information that could document this include, but are not limited to, records of chemicals purchased for the process, analyses of process stream composition, engineering calculations, or process knowledge.

(j) Identification, either by list, location (area or group) of equipment in organic HAP service less than 300 hours per year within a process unit subject to the provisions of this subpart under § 63.160 of this subpart.

(k) Owners and operators choosing to comply with the requirements of § 63.179 of this subpart shall maintain the following records:

(1) Identification of the process unit(s) and the organic HAP's they handle.

(2) A schematic of the process unit, enclosure, and closed-vent system.

(3) A description of the system used to create a negative pressure in the enclosure to ensure that all emissions are routed to the control device.

[59 FR 19568, Apr. 22, 1994, as amended at 59 FR 48177, Sept. 20, 1994; 60 FR 18030, Apr. 10, 1995; 61 FR 31441, June 20, 1996]

#### § 63.182 Reporting requirements.

(a) Each owner or operator of a source subject to this subpart shall submit the reports listed in paragraphs (a)(1) through (a)(5) of this section. Owners or operators requesting an extension of compliance shall also submit the report listed in paragraph (a)(6) of this section.

(1) An Initial Notification described in paragraph (b) of this section, and

(2) A Notification of Compliance Status described in paragraph (c) of this section,

(3) Periodic Reports described in paragraph (d) of this section, and

(4)-(5) [Reserved]

(6) Pursuant to section 112(i)(3)(B) of the Act, an owner or operator may request an extension allowing an existing source up to 1 additional year beyond the compliance date specified in the subpart that references this subpart.

(i) For purposes of this subpart, a request for an extension shall be submitted to the operating permit authority as part of the operating permit application. If the State in which the source is

located does not have an approved operating permit program, a request for an extension shall be submitted to the Administrator as a separate submittal. The dates specified in §63.6(i) of subpart A of this part for submittal of requests for extensions shall not apply to sources subject to this subpart.

(ii) A request for an extension of compliance must include the data described in §63.6(i)(6)(i) (A), (B), and (D) of subpart A of this part.

(iii) The requirements in §63.6(i)(8) through (i)(14) of subpart A of this part will govern the review and approval of requests for extensions of compliance with this subpart.

(b) Each owner or operator of an existing or new source subject to the provisions of this subpart shall submit a written Initial Notification to the Administrator, containing the information described in paragraph (b)(1), according to the schedule in paragraph (b)(2) of this section. The Initial Notification provisions in §63.9(b)(1) through (b)(3) of subpart A of this part shall not apply to owners or operators of sources subject to this subpart.

(1) The Initial Notification shall include the following information:

(i) The name and address of the owner or operator;

(ii) The address (physical location) of the affected source;

(iii) An identification of the chemical manufacturing processes subject to this subpart; and

(iv) A statement of whether the source can achieve compliance by the applicable compliance date specified in the subpart in 40 CFR part 63 that references this subpart.

(2) The Initial Notification shall be submitted according to the schedule in paragraph (b)(2)(i), (b)(2)(ii), or (b)(2)(iii) of this section, as applicable.

(i) For an existing source, the Initial Notification shall be submitted within 120 days after the date of promulgation of the subpart that references this subpart.

(ii) For a new source that has an initial start-up 90 days after the date of promulgation of this subpart or later, the application for approval of construction or reconstruction required by §63.5(d) of subpart A of this part shall be submitted in lieu of the Initial Noti-

fication. The application shall be submitted as soon as practicable before the construction or reconstruction is planned to commence (but it need not be sooner than 90 days after the date of promulgation of the subpart that references this subpart).

(iii) For a new source that has an initial start-up prior to 90 days after the date of promulgation of the applicable subpart, the Initial Notification shall be submitted within 90 days after the date of promulgation of the subpart that references this subpart.

(c) Each owner or operator of a source subject to this subpart shall submit a Notification of Compliance Status within 90 days after the compliance dates specified in the subpart in 40 CFR part 63 that references this subpart, except as provided in paragraph (c)(4) of this section.

(1) The notification shall provide the information listed in paragraphs (c)(1)(i) through (c)(1)(iv) of this section for each process unit subject to the requirements of §63.163 through §63.174 of this subpart.

(i) Process unit identification.

(ii) Number of each equipment type (e.g., valves, pumps) excluding equipment in vacuum service.

(iii) Method of compliance with the standard (for example, "monthly leak detection and repair" or "equipped with dual mechanical seals").

(iv) Planned schedule for each phase of the requirements in §63.163 and §63.168 of this subpart.

(2) The notification shall provide the information listed in paragraphs (c)(2)(i) and (c)(2)(ii) of this section for each process unit subject to the requirements of §63.178(b) of this subpart.

(i) Batch products or product codes subject to the provisions of this subpart, and

(ii) Planned schedule for pressure testing when equipment is configured for production of products subject to the provisions of this subpart.

(3) The notification shall provide the information listed in paragraphs (c)(3)(i) and (c)(3)(ii) of this section for each process unit subject to the requirements in §63.179 of this subpart.

(i) Process unit identification.

(ii) A description of the system used to create a negative pressure in the enclosure and the control device used to comply with the requirements of § 63.172 of this subpart.

(4) For existing sources subject to subpart F of this part, the Notification of Compliance Status shall be submitted for the group of process units with the earliest compliance date specified in § 63.100(k) of subpart F of this part, by no later than 90 days after the compliance date for that group. The Notification of Compliance Status for each subsequent group shall be submitted as part of the first periodic report that is due not less than 90 days after the compliance date for that group.

(d) The owner or operator of a source subject to this subpart shall submit Periodic Reports.

(1) A report containing the information in paragraphs (d)(2), (d)(3), and (d)(4) of this section shall be submitted semiannually starting 6 months after the Notification of Compliance Status, as required in paragraph (c) of this section. The first periodic report shall cover the first 6 months after the compliance date specified in § 63.100(k)(3) of subpart F. Each subsequent periodic report shall cover the 6 month period following the preceding period.

(2) For each process unit complying with the provisions of § 63.163 through § 63.174 of this subpart, the summary information listed in paragraphs (i) through (xvi) of this paragraph for each monitoring period during the 6-month period.

(i) The number of valves for which leaks were detected as described in § 63.168(b) of this subpart, the percent leakers, and the total number of valves monitored;

(ii) The number of valves for which leaks were not repaired as required in § 63.168(f) of this subpart, identifying the number of those that are determined nonrepairable;

(iii) The number of pumps for which leaks were detected as described in § 63.163(b) of this subpart, the percent leakers, and the total number of pumps monitored;

(iv) The number of pumps for which leaks were not repaired as required in § 63.163(c) of this subpart;

(v) The number of compressors for which leaks were detected as described in § 63.164(f) of this subpart;

(vi) The number of compressors for which leaks were not repaired as required in § 63.164(g) of this subpart;

(vii) The number of agitators for which leaks were detected as described in § 63.173(a) and (b) of this subpart;

(viii) The number of agitators for which leaks were not repaired as required in § 63.173(c) of this subpart;

(ix) The number of connectors for which leaks were detected as described in § 63.174(a) of this subpart, the percent of connectors leaking, and the total number of connectors monitored;

(x) [Reserved]

(xi) The number of connectors for which leaks were not repaired as required in § 63.174(d) of this subpart, identifying the number of those that are determined nonrepairable;

(xii) [Reserved]

(xiii) The facts that explain any delay of repairs and, where appropriate, why a process unit shutdown was technically infeasible.

[59 FR 19568, Apr. 22, 1994, as amended at 60 FR 63631, Dec. 12, 1995]

(xiv) The results of all monitoring to show compliance with §§ 63.164(i), 63.165(a), and 63.172(f) of this subpart conducted within the semiannual reporting period.

(xv) If applicable, the initiation of a monthly monitoring program under § 63.168(d)(1)(i) of this subpart, or a quality improvement program under either §§ 63.175 or 63.176 of this subpart.

(xvi) If applicable, notification of a change in connector monitoring alternatives as described in § 63.174(c)(1) of this subpart.

(3) For owners or operators electing to meet the requirements of § 63.178(b) of this subpart, the report shall include the information listed in paragraphs (i) through (v) of this paragraph for each process unit.

(i) Batch product process equipment train identification;

(ii) The number of pressure tests conducted;

(iii) The number of pressure tests where the equipment train failed the pressure test;

(iv) The facts that explain any delay of repairs; and

(v) The results of all monitoring to determine compliance with §63.172(f) of this subpart.

(4) The information listed in paragraph (c) of this section for the Notification of Compliance Status for process units with later compliance dates.

Any revisions to items reported in earlier Notification of Compliance Status, if the method of compliance has changed since the last report.

[59 FR 19568, Apr. 22, 1994, as amended at 59 FR 48178, Sept. 20, 1994; 60 FR 18030, Apr. 10, 1995]

TABLE 1 TO SUBPART H—BATCH PROCESSES  
Monitoring Frequency for Equipment Other than Connectors

| Operating time (% of year) | Equivalent continuous process monitoring frequency time in use |                    |               |
|----------------------------|--|--------------------|---------------|
|                            | Monthly  | Quarterly          | Semiannually  |
| 0 to <25 .....             | Quarterly .....  | Annually .....     | Annually.     |
| 25 to <50 .....            | Quarterly .....  | Semiannually ..... | Annually.     |
| 50 to <75 .....            | Bimonthly .....  | Three times .....  | Semiannually. |
| 75 to 100 .....            | Monthly .....  | Quarterly .....    | Semiannually. |

TABLE 2 TO SUBPART H—SURGE CONTROL VESSELS AND BOTTOMS RECEIVERS AT EXISTING SOURCES

| Vessel capacity (cubic meters) | Vapor pressure <sup>1</sup> (kilopascals) |
|--------------------------------|---|
| 75 ≤ capacity < 151 .....      | ≥ 13.1                                    |
| 151 ≤ capacity .....           | ≥ 5.2 <sup>a</sup>                        |

<sup>1</sup> Maximum true vapor pressure of total organic HAP at operating temperature as defined in subpart G of this part.

[60 FR 18025, Apr. 10, 1995]

TABLE 3 TO SUBPART H—SURGE CONTROL VESSELS AND BOTTOMS RECEIVERS AT NEW SOURCES

| Vessel capacity (cubic meters) | Vapor pressure <sup>1</sup> (kilopascals) |
|--------------------------------|---|
| 38 ≤ capacity < 151 .....      | ≥ 13.1                                    |
| 151 ≤ capacity .....           | ≥ 0.7                                     |

<sup>1</sup> Maximum true vapor pressure of total organic HAP at operating temperature as defined in subpart G of this part.

[60 FR 18025, Apr. 10, 1995]

**Subpart I—National Emission Standards for Organic Hazardous Air Pollutants for Certain Processes Subject to the Negotiated Regulation for Equipment Leaks**

SOURCE: 59 FR 19587, Apr. 22, 1994, unless otherwise noted.

**§63.190 Applicability and designation of source.**

(a) This subpart provides applicability provisions, definitions, and other

general provisions that are applicable to sources subject to this subpart.

(b) Except as provided in paragraph (b)(7) of this section, the provisions of subparts I and H of this part apply to emissions of the designated organic HAP from the processes specified in paragraphs (b)(1) through (b)(6) of this section that are located at a plant site that is a major source as defined in section 112(a) of the Act. The specified processes are further defined in §63.191.

(1) Styrene-butadiene rubber production (butadiene and styrene emissions only).

(2) Polybutadiene rubber production (butadiene emissions only).

(3) The processes producing the agricultural chemicals listed in paragraphs (b)(3)(i) through (b)(3)(v) of this section (butadiene, carbon tetrachloride, methylene chloride, and ethylene dichloride emissions only).

- (i) Captafol<sup>®</sup>,
- (ii) Captan<sup>®</sup>,
- (iii) Chlorothalonil,
- (iv) Dacthal, and
- (v) Tordon<sup>™</sup> acid.

(4) Processes producing the polymers/resins or other chemical products listed in paragraphs (b)(4)(i) through (b)(4)(vi) of this section (carbon tetrachloride, methylene chloride, tetrachloroethylene, chloroform, and ethylene dichloride emissions only).

- (i) Hypalon<sup>®</sup>,
- (ii) Oxybisphenoxarsine/1,3-diisocyanate (OBPA<sup>®</sup>),
- (iii) Polycarbonates,
- (iv) Polysulfide rubber,

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(v) Chlorinated paraffins, and  
(vi) Symmetrical tetrachloropyridine.

(5) Pharmaceutical production processes using carbon tetrachloride or methylene chloride (carbon tetrachloride and methylene chloride emissions only).

(6) Processes producing the polymers/resins or other chemical products listed in paragraphs (b)(6)(i) through (b)(6)(v) of this section (butadiene emissions only).

(i) [Reserved]

(ii) Methylmethacrylate-butadiene-styrene resins (MBS)

(iii) Butadiene-furfural cotrimer,

(iv) Methylmethacrylate-acrylonitrile-butadiene-styrene (MABS) resins, and

(v) Ethylidene norbornene.

(7) The owner or operator of a plant site at which a process specified in paragraphs (b)(1) through (b)(6) of this section is located is exempt from all requirements of this subpart I until not later than April 22, 1997 if the owner or operator certifies, in a notification to the appropriate EPA Regional Office, not later than May 14, 1996, that the plant site at which the process is located emits, and will continue to emit, during any 12-month period, less than 10 tons per year of any individual HAP, and less than 25 tons per year of any combination of HAP.

(i) If such a determination is based on limitations and conditions that are not federally enforceable (as defined in subpart A of this part), the owner or operator shall document the basis for the determination as specified in paragraphs (b)(7)(i)(A) through (b)(7)(i)(C).

(A) The owner or operator shall identify all HAP emission points at the plant site, including those emission points subject to and emission points not subject to subparts F, G, and H of this part;

(B) The owner or operator shall calculate the amount of annual HAP emissions released from each emission point at the plant site, using acceptable measurement or estimating techniques for maximum expected operating conditions at the plant site. Examples of estimating procedures that are considered acceptable include the calculation procedures in § 63.150 of sub-

part G, the early reduction demonstration procedures specified in §§ 63.74(c)(2), (c)(3), (d)(2), (d)(3), and (g), or accepted engineering practices. If the total annual HAP emissions for the plant site are annually reported under EPCRA section 313, then such reported annual emissions may be used to satisfy the requirements of this paragraph.

(C) The owner or operator shall sum the amount of annual HAP emissions from all emission points on the plant site. If the total emissions of any one HAP are less than 10 tons per year and the total emissions of any combination of HAP are less than 25 tons per year, the plant site qualifies for the exemption described in paragraph (b)(7) of this section, provided that emissions are kept below these thresholds.

(ii) If such a determination is based on limitations and conditions that are federally enforceable, and the plant site is not a major source (as defined in subpart A of this part), the owner or operator is not subject to the provisions of paragraph (b)(7) of this section.

(c) The owner or operator of a process listed in paragraph (b) of this section that does not have the designated organic hazardous air pollutants present in the process shall comply only with the requirements of § 63.192(k) of this subpart. To comply with this subpart, such processes shall not be required to comply with the provisions of subpart A of this part.

(d) For the purposes of subparts I and H of this part, the source includes pumps, compressors, agitators, pressure relief devices, sampling connection systems, open-ended valves or lines, valves, connectors, surge control vessels, bottoms receivers, and instrumentation systems that are associated with the processes identified in paragraph (b) of this section and are intended to operate in organic hazardous air pollutant service (as defined in § 63.191 of this subpart) for 300 hours or more during the calendar year.

(e) The owner or operator of a process subject to this subpart is required to comply with the provisions of subpart H of this part on or before the dates specified in paragraph (e)(1) or (e)(2) of this section, unless the owner or operator eliminates the use or production of

all HAP's that cause the process to be subject to this rule no later than 18 months after April 22, 1994.

(1) New sources that commence construction or reconstruction after December 31, 1992 shall comply upon initial start-up or April 22, 1994.

(2) Existing sources shall comply no later than October 24, 1994, except as provided in paragraphs (e)(3) through (e)(6) of this section or unless an extension has been granted by the EPA Regional Office or operating permit authority, as provided in §63.6(i) of subpart A of this part.

(3) Existing process units shall be in compliance with the requirements of §63.164 of subpart H no later than May 10, 1995, for any compressor meeting one or more of the criteria in paragraphs (e)(3)(i) through (e)(3)(iv) of this section, if the work can be accomplished without a process unit shutdown, as defined in §63.161.

(i) The seal system will be replaced;

(ii) A barrier fluid system will be installed;

(iii) A new barrier fluid will be utilized which requires changes to the existing barrier fluid system; or

(iv) The compressor must be modified to permit connecting the compressor to a closed vent system.

(4) Existing process units shall be in compliance with the requirements of §63.164 of subpart H no later than January 23, 1996, for any compressor meeting the criteria in paragraphs (e)(4)(i) through (e)(4)(iv) of this section.

(i) The compressor meets one or more of the criteria specified in paragraphs (e)(3) (i) through (iv) of this section;

(ii) The work can be accomplished without a process unit shutdown as defined in §63.161;

(iii) The additional time is actually necessary due to the unavailability of parts beyond the control of the owner or operator; and

(iv) The owner or operator submits a request to the appropriate EPA Regional Office at the addresses listed in §63.13 of subpart A of this part no later than May 10, 1995. The request shall include the information specified in paragraphs (e)(4)(iv)(A) through (e)(4)(iv)(E) of this section. Unless the EPA Regional Office objects to the request

within 30 days after receipt, the request shall be deemed approved.

(A) The name and address of the owner or operator and the address of the existing source if it differs from the address of the owner or operator;

(B) The name, address, and telephone number of a contact person for further information;

(C) An identification of the process unit, and of the specific equipment for which additional compliance time is required;

(D) The reason compliance cannot reasonably be achieved by May 10, 1995; and

(E) The date by which the owner or operator expects to achieve compliance.

(5)(i) If compliance with the compressor provisions of §63.164 of subpart H of this part cannot reasonably be achieved without a process unit shutdown, as defined in §63.161 of subpart H, the owner or operator shall achieve compliance no later than April 22, 1996, except as provided in paragraph (e)(5)(ii) of this section. The owner or operator who elects to use this provision shall also comply with the requirements of §63.192(g) of this subpart.

(ii) If compliance with the compressor provisions of §63.164 of subpart H of this part cannot be achieved without replacing the compressor or recasting the distance piece, the owner or operator shall achieve compliance no later than April 22, 1997. The owner or operator who elects to use this provision shall also comply with the requirements of §63.192(g) of this subpart.

(6) Existing sources shall be in compliance with the provisions of §63.170 of subpart H no later than April 22, 1997.

(f) The provisions of subparts I and H of this part do not apply to research and development facilities or to bench-scale batch processes, regardless of whether the facilities or processes are located at the same plant site as a process subject to the provisions of subpart I and H of this part.

(g)(1) If an additional process unit specified in paragraph (b) of this section is added to a plant site that is a major source as defined in Section 112(a) of the CAA, the addition shall be subject to the requirements for a new

source in subparts H and I of this part if:

(i) It is an addition that meets the definition of construction in §63.2 of subpart A of this part;

(ii) Such construction commenced after December 31, 1992; and

(iii) The addition has the potential to emit 10 tons per year or more of any HAP or 25 tons per year or more of any combination of HAP's, unless the Administrator establishes a lesser quantity.

(2) If any change is made to a process subject to this subpart, the change shall be subject to the requirements for a new source in subparts H and I of this part if:

(i) It is a change that meets the definition of reconstruction in §63.2 of subpart A of this part;

(ii) Such reconstruction commenced after December 31, 1992.

(3) If an additional process unit is added to a plant site or a change is made to a process unit and the addition or change is determined to be subject to the new source requirements according to paragraphs (g)(1) or (g)(2) of this section:

(i) The new or reconstructed source shall be in compliance with the new source requirements of subparts H and I of this part upon initial start-up of the new or reconstructed source or by April 22, 1994, whichever is later; and

(ii) The owner or operator of the new or reconstructed source shall comply with the reporting and recordkeeping requirements in subparts H and I of this part that are applicable to new sources. The applicable reports include, but are not limited to:

(A) Reports required by §63.182(b), if not previously submitted, §63.182 (c) and (d) of subpart H of this part; and

(B) Reports and notifications required by sections of subpart A of this part that are applicable to subparts H and I of this part, as identified in §63.192(a) of this subpart.

(4) If an additional process unit is added to a plant site, if a surge control vessel or bottoms receiver becomes subject to §63.170 of subpart H, or if a compressor becomes subject to §63.164 of subpart H, and if the addition or change is not subject to the new source requirements as determined according

to paragraphs (g)(1) or (g)(2) of this section, the requirements in paragraphs (g)(4)(i) through (g)(4)(iii) of this section shall apply. Examples of process changes include, but are not limited to, changes in production capacity, feedstock type, or catalyst type, or whenever there is replacement, removal, or addition of recovery equipment. For purposes of this paragraph, process changes do not include: process upsets, unintentional temporary process changes, and changes that are within the equipment configuration and operating conditions documented in the Notification of Compliance Status required by §63.182(c) of subpart H of this part.

(i) The added emission point(s) and any emission point(s) within the added or changed process unit are subject to the requirements of subparts H and I of this part for an existing source;

(ii) The added emission point(s) and any emission point(s) within the added or changed process unit shall be in compliance with subparts H and I of this part by the dates specified in paragraphs (g)(4)(ii)(A) or (g)(4)(ii)(B) of this section, as applicable.

(A) If a process unit is added to a plant site or an emission point(s) is added to an existing process unit, the added process unit or emission point(s) shall be in compliance upon initial start-up of the added process unit or emission point(s) or by April 22, 1997, whichever is later.

(B) If a surge control vessel or bottoms receiver becomes subject to §63.170 of subpart H, if a compressor becomes subject to §63.164 of subpart H, or if a deliberate operational process change causes equipment to become subject to subpart H of this part, the owner or operator shall be in compliance upon initial start-up or by April 22, 1997, whichever is later, unless the owner or operator demonstrates to the Administrator that achieving compliance will take longer than making the change. The owner or operator shall submit to the Administrator for approval a compliance schedule, along with a justification for the schedule. The Administrator shall approve the compliance schedule or request

changes within 120 calendar days of receipt of the compliance schedule and justification.

(iii) The owner or operator of a process unit or emission point that is added to a plant site and is subject to the requirements for existing sources shall comply with the reporting and record-keeping requirements of subparts H and I of this part that are applicable to existing sources, including, but not limited to, the reports listed in paragraphs (g)(4)(iii)(A) and (g)(4)(iii)(B) of this section.

(A) Reports required by § 63.182 of subpart H of this part; and

(B) Reports and notifications required by sections of subpart A of this part that are applicable to subparts H and I of this part, as identified in § 63.192(a) of this subpart.

(h) *Rules stayed for reconsideration.* Notwithstanding any other provision of this subpart, the effectiveness of subpart I is stayed from October 24, 1994, to April 24, 1995, only as applied to those sources for which the owner or operator makes a representation in writing to the Administrator that the resolution of the area source definition issues could have an effect on the compliance status of the source with respect to subpart I.

(i) *Sections stayed for reconsideration.* Notwithstanding any other provision of this subpart, the effectiveness of §§ 63.164 and 63.170 of subpart H is stayed from October 28, 1994, to April 24, 1995, only as applied to those sources subject to § 63.190(e)(2).

(j) If a change that does not meet the criteria in paragraph (g)(4) of this section is made to a process unit subject to subparts H and I of this part, and the change causes equipment to become subject to the provisions of subpart H of this part, then the owner or operator shall comply with the requirements of subpart H of this part for the equipment as expeditiously as practical, but in no event later than three years after the equipment becomes subject.

(1) The owner or operator shall submit to the Administrator for approval a compliance schedule, along with a justification for the schedule.

(2) The Administrator shall approve the compliance schedule or request

changes within 120 calendar days of receipt of the compliance schedule and justification.

[59 FR 19587, Apr. 22, 1994, as amended at 59 FR 48178, Sept. 20, 1994; 59 FR 53360, Oct. 24, 1994; 59 FR 54132, Oct. 28, 1994; 60 FR 5321, Jan. 27, 1995; 60 FR 18025, Apr. 10, 1995; 61 FR 7718, Feb. 29, 1996; 61 FR 31441, June 20, 1996]

#### § 63.191 Definitions.

(a) The following terms as used in subparts I and H of this part shall have the meaning given them in subpart A of this part: Act, Administrator, approved permit program, commenced, compliance date, construction, effective date, EPA, equivalent emission limitation, existing source, Federally enforceable, hazardous air pollutant, lesser quantity, major source, malfunction, new source, owner or operator, performance evaluation, performance test, permit program, permitting authority, reconstruction, relevant standard, responsible official, run, standard conditions, State, and stationary source.

(b) All other terms used in this subpart and in subpart H of this part shall have the meaning given them in the Act and in this section. If the same term is defined in subpart A or H of this part and in this section, it shall have the meaning given in this section for purposes of subparts I and H of this part.

*Bench-scale batch process* means a batch process (other than a research and development facility) that is operated on a small scale, such as one capable of being located on a laboratory bench top. This bench-scale equipment will typically include reagent feed vessels, a small reactor and associated product separator, recovery and holding equipment. These processes are only capable of producing small quantities of product.

*Bottoms receiver* means a tank that collects distillation bottoms before the stream is sent for storage or for further downstream processing.

*Butadiene-furfural cotrimer (R-11)* means the product of reaction of butadiene with excess furfural in a liquid phase reactor. R-11 is usually used as an insect repellent and as a delousing agent for cows in the dairy industry.

*Captafol*<sup>®</sup> means the fungicide Captafol ((cis-N(1,1,2,2-tetrachloroethyl)-thio]-4-cylcohexene-1,2-dicarboximide). The category includes any production process units that store, react, or otherwise process 1,3-butadiene in the production of Captafol.

*Captan*<sup>®</sup> means the fungicide Captan. The production process typically includes, but is not limited to, the reaction of tetrahydrophthalimide and perchloromethyl mercaptan with caustic.

*Chlorinated paraffins* means dry chlorinated paraffins, which are mainly straight-chain, saturated hydrocarbons. The category includes, but is not limited to, production of chlorinated paraffins by passing gaseous chlorine into a paraffin hydrocarbon or by chlorination by using solvents, such as carbon tetrachloride, under reflux.

*Chlorothalonil* means the agricultural fungicide, bactericide and nematocide Chlorothalonil (Daconil). The category includes any process units utilized to dissolve tetrachlorophthalic acid chloride in an organic solvent, typically carbon tetrachloride, with the subsequent addition of ammonia.

*Dacthal*<sup>™</sup> means the pre-emergent herbicide Dacthal<sup>™</sup>, also known as DCPA, DAC, and dimethyl ester 2,3,5,6-tetrachloroterephthalic acid. The category includes, but is not limited to, chlorination processes and the following production process units: photochlorination reactors, thermal chlorination reactors, and condensers.

*Ethylidene Norbornene* means the diene with CAS number 16219-75-3. Ethylidene norbornene is used in the production of ethylene-propylene rubber products.

*Hypalon*<sup>™</sup> (chlorosulfonated polyethylene) means a synthetic rubber produced by reacting polyethylene with chloric and sulfur dioxide, transforming the thermoplastic polyethylene into a vulcanized elastomer. The reaction is conducted in a solvent (carbon tetrachloride) reaction medium.

*Initial start-up* means the first time a new or reconstructed source begins production. Initial start-up does not include operation solely for testing

equipment. For purposes of subpart H of this part, initial start-up does not include subsequent start-ups (as defined in §63.161 of subpart H of this part) of process units (as defined in §63.161 of subpart H of this part) following malfunctions or process unit shut-downs.

*In organic hazardous air pollutant service or in organic HAP service* means that a piece of equipment either contains or contacts a fluid (liquid or gas) that is at least 5 percent by weight of the designated organic HAP's listed in §63.190(b) of this subpart.

*Methyl Methacrylate-Acrylonitrile-Butadiene-Styrene (MABS) Resins* means styrenic polymers containing methyl methacrylate, acrylonitrile, 1,3-butadiene, and styrene. The MABS copolymers are prepared by dissolving or dispersing polybutadiene rubber in a mixture of methyl methacrylate-acrylonitrile-styrene and butadiene monomer. The graft polymerization is carried out by a bulk or a suspension process.

*Methyl Methacrylate-Butadiene-Styrene (MBS) Resins* means styrenic polymers containing methyl methacrylate, 1,3-butadiene, and styrene. Production of MBS terpolymers is achieved using an emulsion process in which methyl methacrylate and styrene are grafted onto a styrene-butadiene rubber.

*Oxybisphenoxarsine (OBPA)/1,3-Diisocyanate* means the chemical with CAS number 58-36-6. The chemical is primarily used for fungicidal and bactericidal protection of plastics. The process uses chloroform as a solvent.

*Pharmaceutical production process* means a process that synthesizes one or more pharmaceutical intermediate or final products using carbon tetrachloride or methylene chloride as a reactant or process solvent. Pharmaceutical production process does not mean process operations involving formulation activities, such as tablet coating or spray coating of drug particles, or solvent recovery or waste management operations.

*Polybutadiene production* means a process that produces polybutadiene through the polymerization of 1,3-butadiene.

*Polycarbonates* means a special class of polyester formed from any

dihydroxy compound and any carbonate diester or by ester interchange. Polycarbonates may be produced by solution or emulsion polymerization, although other methods may be used. A typical method for the manufacture of polycarbonates includes the reaction of bisphenol-A with phosgene in the presence of pyridine to form a polycarbonate. Methylene chloride is used as a solvent in this polymerization reaction.

*Polysulfide rubber* means a synthetic rubber produced by reaction of sodium sulfide and p-dichlorobenzene at an elevated temperature in a polar solvent. This rubber is resilient and has low temperature flexibility.

*Process Unit* means the group of equipment items used to process raw materials and to manufacture a product. For the purposes of this subpart, process unit includes all unit operations and associated equipment (e.g., reactors and associated product separators and recovery devices), associated unit operations (e.g., extraction columns), any feed and product storage vessels, and any transfer racks for distribution of final product.

*Research and development facility* means laboratory and pilot plant operations whose primary purpose is to conduct research and development into new processes and products, where the operations are under the close supervision of technically trained personnel, and is not engaged in the manufacture of products except in a de minimis manner.

*Source* means the collection of equipment listed in § 63.190(d) to which this subpart applies as determined by the criteria in § 63.190. For purposes of subparts H and I of this part, the term *affected source* as used in subpart A of this part has the same meaning as the term *source* defined here.

*Styrene-butadiene rubber production* means a process that produces styrene-butadiene copolymers, whether in solid (elastomer) or emulsion (latex) form.

*Surge control vessel* means feed drums, recycle drums, and intermediate vessels. Surge control vessels are used within a process unit when in-process storage, mixing, or management of flow rates or volumes is needed to assist in production of a product.

*Symmetrical tetrachloropyridine* means the chemical with CAS number 2402-79-1.

*Tordon acid*<sup>TM</sup> means the synthetic herbicide 4-amino-3,5,6-trichloropicolinic acid, picloram. The category includes, but is not limited to, chlorination processes utilized in Tordon<sup>TM</sup> acid production.

[59 FR 19587, Apr. 22, 1994, as amended at 59 FR 48178, Sept. 20, 1994; 60 FR 18026, 18030, Apr. 10, 1995; 61 FR 31442, June 20, 1996]

#### § 63.192 Standard.

(a)(1) The owner or operator of a source subject to this subpart shall comply with the requirements of subpart H of this part for the processes and designated organic HAP's listed in § 63.190(b) of this subpart.

(2) The owner or operator of a pharmaceutical production process subject to this subpart may define a process unit as a set of operations, within a source, producing a product, as all operations collocated within a building or structure or as all affected operations at the source.

(b) All provisions in §§ 63.1 through 63.15 of subpart A of this part which apply to owners and operators of sources subject to subparts I and H of this part, are:

(1) The applicability provisions of § 63.1 (a)(1), (a)(2), (a)(10), (a)(12) through (a)(14);

(2) The definitions of § 63.2 unless changed or modified by specific entry in § 63.191 or § 63.161;

(3) The units and abbreviations in § 63.3;

(4) The prohibited activities and circumvention provisions of § 63.4 (a)(1), (a)(2), (a)(3), (a)(5), and (b);

(5) The construction and reconstruction provisions of § 63.5(a), (b)(1), (b)(3), (d) (except the review is limited to the equipment subject to the provisions of subpart H), (e), and (f);

(6)(i) The compliance with standards and maintenance requirements of § 63.6(a), (b)(3), (c)(5), (e), (i)(1), (i)(2), (i)(4)(i)(A), (i)(6)(i), (i)(8) through (i)(10), (i)(12) through (i)(14), (i)(16), and (j);

(ii) The operational and maintenance requirements of § 63.6(e). The startup, shutdown, and malfunction plan requirement of § 63.6(e)(3) is limited to

control devices subject to the provisions of subpart H of part 63 and is optional for other equipment subject to subpart H. The startup, shutdown, and malfunction plan may include written procedures that identify conditions that justify a delay of repair.

(7) With respect to flares, the performance testing requirements of §63.7(a)(3), (d), (e)(1), (e)(2), (e)(4), and (h);

(8) The notification requirements of §63.9 (a)(1), (a)(3), (a)(4), (b)(1)(i), (b)(4), (b)(5) (except, use the schedule specified in subpart H), (c), (d), and (i);

(9) The recordkeeping and reporting requirements of §63.10(a) and (f);

(10) The control device requirements of §63.11(b); and

(11) The provisions of §63.12 through §63.15.

(c) Initial performance tests and initial compliance determinations shall be required only as specified in subpart H of this part.

(1) Performance tests and compliance determinations shall be conducted according to the applicable sections of subpart H.

(2) The owner or operator shall notify the Administrator of the intention to conduct a performance test at least 30 days before the performance test is scheduled to allow the Administrator the opportunity to have an observer present during the test.

NOTE: This requirement does not apply to equipment subject to monitoring using Method 21 of part 60, appendix A.

(3) Performance tests shall be conducted according to the provisions of §63.7(e) of subpart A of this part, except that performance tests shall be conducted at maximum representative operating conditions for the process. During the performance test, an owner or operator may operate the control or recovery device at maximum or minimum representative operating conditions for monitored control or recovery device parameters, whichever results in lower emission reduction.

(4) Data shall be reduced in accordance with the EPA-approved methods specified in the applicable subpart, or, if other test methods are used, the data and methods shall be validated according to the protocol in Method 301 of appendix A of this part.

(d) An application for approval of construction or reconstruction, 40 CFR 63.5 of this chapter, will not be required if:

(1) The new process unit complies with the applicable standards in §63.162 or §63.178 of subpart H of this part; and

(2) In the next semiannual report required by §63.182(d) of subpart H of this part, the information in §63.182(c) of subpart H of this part is reported.

(e) If an owner or operator of a process plans to eliminate the use or production of all HAP's that cause the process to be subject to the provisions of subparts I and H of this part no later than 18 months after April 22, 1994, the owner or operator shall submit to the Administrator a brief description of the change, identify the HAP's eliminated, and the expected date of cessation of operation of the current process, by no later than January 23, 1995.

(f) Each owner or operator of a source subject to subparts I and H of this part shall keep copies of all applicable reports and records required by subpart H for at least 2 years, except as otherwise specified in subpart H.

(1) All applicable records shall be maintained in such a manner that they can be readily accessed. This could include hard-copy or computer records maintained on-site at the source or accessing the records from a central location by computer.

(2) The owner or operator subject to subparts I and H of this part shall keep the records specified in this paragraph, as well as records specified in subpart H of this part.

(i) Records of the occurrence and duration of each start-up, shutdown, and malfunction of operation of a process subject to this subpart as specified in §63.190(b) of this subpart.

(ii) Records of the occurrence and duration of each malfunction of air pollution control equipment or continuous monitoring systems used to comply with subparts I and H of this part.

(iii) For each start-up, shutdown, and malfunction, records that the procedures specified in the source's start-up, shutdown, and malfunction plan were followed, and documentation of actions taken that are not consistent with the plan.

(g) All reports required under subpart H shall be sent to the Administrator at the addresses listed in § 63.13 of subpart A of this part.

(1) Wherever subpart A specifies "postmark" dates, submittals may be sent by methods other than the U.S. Mail (e.g., by fax or courier).

(i) Submittals sent by U.S. Mail shall be postmarked on or before the specified date.

(ii) Submittals sent by other methods shall be received by the Administrator on or before the specified date.

(2) If acceptable to both the Administrator and the owner or operator of a source, reports may be submitted on electronic media.

(h) If, in the judgment of the Administrator, an alternative means of emission limitation will achieve a reduction in organic HAP emissions at least equivalent to the reduction in organic HAP emissions from that source achieved under any design, equipment, work practice, or operational standards in subpart H of this part, the Administrator will publish in the FEDERAL REGISTER a notice permitting the use of the alternative means for purposes of compliance with that requirement.

(1) The notice may condition the permission on requirements related to the operation and maintenance of the alternative means.

(2) Any notice under paragraph (h) of this section shall be published only after public notice and an opportunity for a hearing.

(3) Any person seeking permission to use an alternative means of compliance under this section shall collect, verify, and submit to the Administrator information showing that the alternative means achieves equivalent emission reductions.

(i) Each owner or operator of a source subject to this subpart shall obtain a permit under 40 CFR part 70 or part 71 from the appropriate permitting authority.

(1) If EPA has approved a State operating permit program under 40 CFR part 70, the permit shall be obtained from the State authority.

(2) If the State operating permit program has not been approved, the source shall apply to the EPA regional office pursuant to 40 CFR part 71.

(j) The requirements in subparts I and H of this part are Federally enforceable under section 112 of the Act on and after the dates specified in § 63.190(d) of this subpart.

(k) The basis for the determination that a process does not use as a reactant or manufacture as a product the designated organic hazardous air pollutant shall be documented. Examples of information that could document this include, but are not limited to, records of chemicals purchased for the process, analyses of process stream composition, engineering calculations, or process knowledge.

(l) To qualify for the exemption specified in § 63.190(b)(7) of this subpart, the owner or operator shall maintain the documentation of the information required pursuant to § 63.190(b)(7)(i), and documentation of any update of this information requested by the EPA Regional Office, and shall provide the documentation to the EPA Regional Office upon request. The EPA Regional Office will notify the owner or operator, after reviewing such documentation, whether, in the EPA Regional Office's judgment, the source does not qualify for the exemption specified in § 63.190(b)(7) of this subpart. In such cases, compliance with this subpart shall be required no later than 90 days after the date of such notification by the EPA Regional Office.

(m) An owner or operator who elects to use the compliance extension provisions of § 63.190(e)(5) (i) or (ii) shall submit a compliance extension request to the appropriate EPA Regional Office no later than May 10, 1995. The request shall contain the information specified in § 63.190(e)(4)(iv) and the reason compliance cannot reasonably be achieved without a process unit shutdown, as defined in § 63.161 of subpart H or replacement of the compressor or recasting of the distance piece.

[59 FR 19587, Apr. 22, 1994, as amended at 59 FR 48178, Sept. 20, 1994; 60 FR 18026, 18030, Apr. 10, 1995; 61 FR 31442, June 20, 1996]

#### § 63.193 Delegation of authority.

In delegating implementation and enforcement authority to a State under section 112(d) of the Act, the authority for § 63.177 of subpart H of this

part shall be retained by the Administrator and not transferred to a State.

### Subparts J-K—[Reserved]

### Subpart L—National Emission Standards for Coke Oven Batteries

SOURCE: 58 FR 57911, Oct. 27, 1993, unless otherwise noted.

#### § 63.300 Applicability.

(a) Unless otherwise specified in §§ 63.306, 63.307, and 63.311, the provisions of this subpart apply to existing by-product coke oven batteries at a coke plant and to existing nonrecovery coke oven batteries at a coke plant on and after the following dates:

(1) December 31, 1995, for existing by-product coke oven batteries subject to emission limitations in § 63.302(a)(1) or existing nonrecovery coke oven batteries subject to emission limitations in § 63.303(a);

(2) January 1, 2003, for existing by-product coke oven batteries subject to emission limitations in § 63.302(a)(2);

(3) November 15, 1993, for existing by-product and nonrecovery coke oven batteries subject to emission limitations in § 63.304(b)(1) or 63.304(c);

(4) January 1, 1998, for existing by-product coke oven batteries subject to emission limitations in § 63.304(b)(2) or 63.304(b)(7); and

(5) January 1, 2010, for existing by-product coke oven batteries subject to emission limitations in § 63.304(b)(3) or 63.304(b)(7).

(b) The provisions for new sources in §§ 63.302(b), 63.302(c), and 63.303(b) apply to each greenfield coke oven battery and to each new or reconstructed coke oven battery at an existing coke plant if the coke oven battery results in an increase in the design capacity of the coke plant as of November 15, 1990, (including any capacity qualifying under § 63.304(b)(6), and the capacity of any coke oven battery subject to a construction permit on November 15, 1990, which commenced operation before October 27, 1993.

(c) The provisions of this subpart apply to each brownfield coke oven battery, each padup rebuild, and each cold-idle coke oven battery that is restarted.

(d) The provisions of §§ 63.304(b)(2)(i)(A) and 63.304(b)(3)(i) apply to each foundry coke producer as follows:

(1) A coke oven battery subject to § 63.304(b)(2)(i)(A) or § 63.304(b)(3)(i) must be a coke oven battery that on January 1, 1992, was owned or operated by a foundry coke producer; and

(2)(i) A coke oven battery owned or operated by an integrated steel producer on January 1, 1992, and listed in paragraph (d)(2)(ii) of this section, that was sold to a foundry coke producer before November 15, 1993, shall be deemed for the purposes of paragraph (d)(1) of this section to be owned or operated by a foundry coke producer on January 1, 1992.

(ii) The coke oven batteries that may qualify under this provision are the following:

(A) The coke oven batteries at the Bethlehem Steel Corporation's Lackawanna, New York facility; and

(B) The coke oven batteries at the Rouge Steel Company's Dearborn, Michigan facility.

(e) The emission limitations set forth in this subpart shall apply at all times except during a period of startup, shutdown, or malfunction. The startup period shall be determined by the Administrator and shall not exceed 180 days.

(f) After October 28, 1992, rules of general applicability promulgated under section 112 of the Act, including the General Provisions, may apply to coke ovens provided that the topic covered by such a rule is not addressed in this subpart.

#### § 63.301 Definitions.

Terms used in this subpart are defined in the Act or in this section as follows:

*Administrator* means the Administrator of the United States Environmental Protection Agency or his or her authorized representative (e.g., a State that has been delegated the authority to implement the provisions of this subpart or its designated agent).

*Brownfield coke oven battery* means a new coke oven battery that replaces an existing coke oven battery or batteries with no increase in the design capacity of the coke plant as of November 15, 1990 (including capacity qualifying

under § 63.304(b)(6), and the capacity of any coke oven battery subject to a construction permit on November 15, 1990, which commenced operation before October 27, 1993.

*Bypass/bleeder stack* means a stack, duct, or offtake system that is opened to the atmosphere and used to relieve excess pressure by venting raw coke oven gas from the collecting main to the atmosphere from a by-product coke oven battery, usually during emergency conditions.

*By-product coke oven battery* means a source consisting of a group of ovens connected by common walls, where coal undergoes destructive distillation under positive pressure to produce coke and coke oven gas, from which by-products are recovered. Coke oven batteries in operation as of April 1, 1992, are identified in appendix A to this subpart.

*Certified observer* means a visual emission observer, certified under (if applicable) Method 303 and Method 9 (if applicable) and employed by the Administrator, which includes a delegated enforcement agency or its designated agent. For the purpose of notifying an owner or operator of the results obtained by a certified observer, the person does not have to be certified.

*Charge or charging period* means, for a by-product coke oven battery, the period of time that commences when coal begins to flow into an oven through a topside port and ends when the last charging port is recapped. For a non-recovery coke oven battery, *charge or charging period* means the period of time that commences when coal begins to flow into an oven and ends when the push side door is replaced.

*Coke oven battery* means either a by-product or nonrecovery coke oven battery.

*Coke oven door* means each end enclosure on the pusher side and the coking side of an oven. The chuck, or leveler-bar, door is part of the pusher side door. A *coke oven door* includes the entire area on the vertical face of a coke oven between the bench and the top of the battery between two adjacent buckstays.

*Cold-idle coke oven battery* means an existing coke oven battery that has been shut down, but is not dismantled.

*Collecting main* means any apparatus that is connected to one or more offtake systems and that provides a passage for conveying gases under positive pressure from the by-product coke oven battery to the by-product recovery system.

*Collecting main repair* means any measure to stop a collecting main leak on a long-term basis. A repair measure in general is intended to restore the integrity of the collecting main by returning the main to approximately its design specifications or its condition before the leak occurred. A repair measure may include, but is not limited to, replacing a section of the collecting main or welding the source of the leak.

*Consecutive charges* means charges observed successively, excluding any charge during which the observer's view of the charging system or topside ports is obscured.

*Design capacity* means the original design capacity of a coke oven battery, expressed in megagrams per year of furnace coke.

*Foundry coke producer* means a coke producer that is not and was not on January 1, 1992, owned or operated by an integrated steel producer and had on January 1, 1992, an annual design capacity of less than 1.25 million megagrams per year (not including any capacity satisfying the requirements of § 63.300(d)(2) or § 63.304(b)(6)).

*Greenfield coke oven battery* means a coke oven battery for which construction is commenced at a plant site (where no coke oven batteries previously existed) after December 4, 1992.

*Integrated steel producer* means a company or corporation that produces coke, uses the coke in a blast furnace to make iron, and uses the iron to produce steel. These operations may be performed at different plant sites within the corporation.

*Malfunction* means any sudden, infrequent, and not reasonably preventable failure of air pollution control equipment, process equipment, or a process to operate in a normal or usual manner. Failures caused in part by poor maintenance or careless operation are not *malfunctions*.

*New shed* means a shed for which construction commenced after September

15, 1992. The shed at Bethlehem Steel Corporation's Bethlehem plant on Battery A is deemed not to be a *new shed*.

*Nonrecovery coke oven battery* means a source consisting of a group of ovens connected by common walls and operated as a unit, where coal undergoes destructive distillation under negative pressure to produce coke, and which is designed for the combustion of the coke oven gas from which by-products are not recovered.

*Offtake system* means any individual oven apparatus that is stationary and provides a passage for gases from an oven to a coke oven battery collecting main or to another oven. Offtake system components include the standpipe and standpipe caps, goosenecks, stationary jumper pipes, mini-standpipes, and standpipe and gooseneck connections.

*Oven* means a chamber in the coke oven battery in which coal undergoes destructive distillation to produce coke.

*Padup rebuild* means a coke oven battery that is a complete reconstruction of an existing coke oven battery on the same site and pad without an increase in the design capacity of the coke plant as of November 15, 1990 (including any capacity qualifying under § 63.304(b)(6)), and the capacity of any coke oven battery subject to a construction permit on November 15, 1990, which commenced operation before October 27, 1993. The Administrator may determine that a project is a *padup rebuild* if it effectively constitutes a replacement of the battery above the pad, even if some portion of the brickwork above the pad is retained.

*Pushing*, for the purposes of § 63.305, means that coke oven operation that commences when the pushing ram starts into the oven to push out coke that has completed the coking cycle and ends when the quench car is clear of the coke side shed.

*Run* means the observation of visible emissions from topside port lids, offtake systems, coke oven doors, or the charging of a coke oven that is made in accordance with and is valid under Methods 303 or 303A in appendix A to this part.

*Shed* means a structure for capturing coke oven emissions on the coke side

or pusher side of the coke oven battery, which routes the emissions to a control device or system.

*Short coke oven battery* means a coke oven battery with ovens less than 6 meters in height.

*Shutdown* means the operation that commences when pushing has occurred on the first oven with the intent of pushing the coke out of all of the ovens in a coke oven battery without adding coal, and ends when all of the ovens of a coke oven battery are empty of coal or coke.

*Standpipe cap* means an apparatus used to cover the opening in the gooseneck of an offtake system.

*Startup* means that operation that commences when the coal begins to be added to the first oven of a coke oven battery that either is being started for the first time or that is being restarted and ends when the doors have been adjusted for maximum leak reduction and the collecting main pressure control has been stabilized. Except for the first startup of a coke oven battery, a startup cannot occur unless a shutdown has occurred.

*Tall coke oven battery* means a coke oven battery with ovens 6 meters or more in height.

*Temporary seal* means any measure, including but not limited to, application of luting or packing material, to stop a collecting main leak until the leak is repaired.

*Topside port lid* means a cover, removed during charging or decarbonizing, that is placed over the opening through which coal can be charged into the oven of a by-product coke oven battery.

#### **§ 63.302 Standards for by-product coke oven batteries.**

(a) Except as provided in § 63.304 or § 63.305, on and after the dates specified in this paragraph, no owner or operator shall cause to be discharged or allow to be discharged to the atmosphere, coke oven emissions from each affected existing by-product coke oven battery that exceed any of the following emission limitations or requirements:

(1) On and after December 31, 1995;

(i) For coke oven doors;

(A) 6.0 percent leaking coke oven doors for each tall by-product coke

oven battery, as determined according to the procedures in § 63.309(d)(1); and

(B) 5.5 percent leaking coke oven doors for each short by-product coke oven battery, as determined according to the procedures in § 63.309(d)(1);

(ii) 0.6 percent leaking topside port lids, as determined by the procedures in § 63.309(d)(1);

(iii) 3.0 percent leaking offtake system(s), as determined by the procedures in § 63.309(d)(1); and

(iv) 12 seconds of visible emissions per charge, as determined by the procedures in § 63.309(d)(2).

(2) On and after January 1, 2003, unless the Administrator promulgates more stringent limits pursuant to section 112(f) of the Act;

(i) 5.5 percent leaking coke oven doors for each tall by-product coke oven battery, as determined by the procedures in § 63.309(d)(1); and

(ii) 5.0 percent leaking coke oven doors for each short by-product coke oven battery, as determined by the procedures in § 63.309(d)(1).

(b) Except as provided in paragraph (c) of this section, no owner or operator shall cause to be discharged or allow to be discharged to the atmosphere, coke oven emissions from a by-product coke oven battery subject to the applicability requirements in § 63.300(b) that exceed any of the following emission limitations:

(1) 0.0 percent leaking coke oven doors, as determined by the procedures in § 63.309(d)(1);

(2) 0.0 percent leaking topside port lids, as determined by the procedures in § 63.309(d)(1);

(3) 0.0 percent leaking offtake system(s), as determined by the procedures in § 63.309(d)(1); and

(4) 34 seconds of visible emissions per charge, as determined by the procedures in § 63.309(d)(2).

(c) The emission limitations in paragraph (b) of this section do not apply to the owner or operator of a by-product coke oven battery that utilizes a new recovery technology, including but not limited to larger size ovens, operation under negative pressure, and processes with emission points different from those regulated under this subpart. An owner or operator constructing a new by-product coke oven battery or recon-

structing an existing by-product recovery battery that utilizes a new recovery technology shall:

(1) Notify the Administrator of the intention to do so, as required in § 63.311(c); and

(2) Submit, for the determination under section 112(g)(2)(B) of the Act, and as part of the application for permission to construct or reconstruct, all information and data requested by the Administrator for the determination of applicable emission limitations and requirements for that by-product coke oven battery.

(d) Emission limitations and requirements applied to each coke oven battery utilizing a new recovery technology shall be less than the following emission limitations or shall result in an overall annual emissions rate for coke oven emissions for the battery that is lower than that obtained by the following emission limitations:

(1) 4.0 percent leaking coke oven doors on tall by-product coke oven batteries, as determined by the procedures in § 63.309(d)(1);

(2) 3.3 percent leaking coke oven doors on short by-product coke oven batteries, as determined by the procedures in § 63.309(d)(1);

(3) 2.5 percent leaking offtake system(s), as determined by the procedures in § 63.309(d)(1);

(4) 0.4 percent leaking topside port lids, as determined by the procedures in § 63.309(d)(1); and

(5) 12 seconds of visible emissions per charge, as determined by the procedures in § 63.309(d)(2).

**§ 63.303 Standards for nonrecovery coke oven batteries.**

(a) Except as provided in § 63.304, on and after December 31, 1995, no owner or operator shall cause to be discharged or allow to be discharged to the atmosphere coke oven emissions from each affected existing nonrecovery coke oven battery that exceed any of the following emission limitations or requirements:

(1) For coke oven doors;

(i) 0.0 percent leaking coke oven doors, as determined by the procedures in § 63.309(d)(1); or

(ii) The owner or operator shall monitor and record, once per day for each

day of operation, the pressure in each oven or in a common battery tunnel to ensure that the ovens are operated under a negative pressure.

(2) For charging operations, the owner or operator shall implement, for each day of operation, the work practices specified in § 63.306(b)(6) and record the performance of the work practices as required in § 63.306(b)(7).

(b) No owner or operator shall cause to be discharged or allow to be discharged to the atmosphere coke oven emissions from each affected new nonrecovery coke oven battery subject to the applicability requirements in § 63.300(b) that exceed any of the following emission limitations or requirements:

(1) For coke oven doors;

(i) 0.0 percent leaking coke oven doors, as determined by the procedures in § 63.309(d)(1); or

(ii) The owner or operator shall monitor and record, once per day for each day of operation, the pressure in each oven or in a common battery tunnel to ensure that the ovens are operated under a negative pressure;

(2) For charging operations, the owner or operator shall install, operate, and maintain an emission control system for the capture and collection of emissions in a manner consistent with good air pollution control practices for minimizing emissions from the charging operation;

(3) 0.0 percent leaking topside port lids, as determined by the procedures in § 63.309(d)(1) (if applicable to the new nonrecovery coke oven battery); and

(4) 0.0 percent leaking offtake system(s), as determined by the procedures in § 63.309(d)(1) (if applicable to the new nonrecovery coke oven battery).

**§ 63.304 Standards for compliance date extension.**

(a) An owner or operator of an existing coke oven battery (including a cold-idle coke oven battery), a padup rebuild, or a brownfield coke oven battery, may elect an extension of the compliance date for emission limits to be promulgated pursuant to section 112(f) of the Act in accordance with section 112(i)(8). To receive an extension of the compliance date from January 1,

2003, until January 1, 2020, the owner or operator shall notify the Administrator as described in § 63.311(c) that the battery will comply with the emission limitations and requirements in this section in lieu of the applicable emission limitations in § 63.302 or 63.303.

(b) Except as provided in paragraphs (b)(4), (b)(5), and (b)(7) of this section and in § 63.305, on and after the dates specified in this paragraph, no owner or operator shall cause to be discharged or allow to be discharged to the atmosphere coke oven emissions from a by-product coke oven battery that exceed any of the following emission limitations:

(1) On and after November 15, 1993;

(i) 7.0 percent leaking coke oven doors, as determined by the procedures in § 63.309(d)(1);

(ii) 0.83 percent leaking topside port lids, as determined by the procedures in § 63.309(d)(1);

(iii) 4.2 percent leaking offtake system(s), as determined by the procedures in § 63.309(d)(1); and

(iv) 12 seconds of visible emissions per charge, as determined by the procedures in § 63.309(d)(2).

(2) On and after January 1, 1998;

(i) For coke oven doors:

(A) 4.3 percent leaking coke oven doors for each tall by-product coke oven battery and for each by-product coke oven battery owned or operated by a foundry coke producer, as determined by the procedures in § 63.309(d)(1); and

(B) 3.8 percent leaking coke oven doors on each by-product coke oven battery not subject to the emission limitation in paragraph (b)(2)(i)(A) of this section, as determined by the procedures in § 63.309(d)(1);

(ii) 0.4 percent leaking topside port lids, as determined by the procedures in § 63.309(d)(1);

(iii) 2.5 percent leaking offtake system(s), as determined by the procedures in § 63.309(d)(1); and

(iv) 12 seconds of visible emissions per charge, as determined by the procedures in § 63.309(d)(2).

(3) On and after January 1, 2010, unless the Administrator promulgates more stringent limits pursuant to section 112(i)(8)(C) of the Act;

(i) 4.0 percent leaking coke oven doors on each tall by-product coke oven battery and for each by-product coke oven battery owned or operated by a foundry coke producer, as determined by the procedures in § 63.309(d)(1); and

(ii) 3.3 percent leaking coke oven doors for each by-product coke oven battery not subject to the emission limitation in paragraph (b)(3)(i) of this section, as determined by the procedures in § 63.309(d)(1).

(4) No owner or operator shall cause to be discharged or allow to be discharged to the atmosphere coke oven emissions from a brownfield or padup rebuild by-product coke oven battery, other than those specified in paragraph (b)(4)(v) of this section, that exceed any of the following emission limitations:

(i) For coke oven doors;

(A) 4.0 percent leaking coke oven doors for each tall by-product coke oven battery, as determined by the procedures in § 63.309(d)(1); and

(B) 3.3 percent leaking coke oven doors on each short by-product coke oven battery, as determined by the procedures in § 63.309(d)(1);

(ii) 0.4 percent leaking topside port lids, as determined by the procedures in § 63.309(d)(1);

(iii) 2.5 percent leaking offtake system(s), as determined by the procedures in § 63.309(d)(1); and

(iv) 12 seconds of visible emissions per charge, as determined by the procedures in § 63.309(d)(2).

(v) The requirements of paragraph (b)(4) of this section shall not apply and the requirements of paragraphs (b)(1), (b)(2), and (b)(3) of this section do apply to the following brownfield or padup rebuild coke oven batteries:

(A) Bethlehem Steel-Burns Harbor, Battery No. 2;

(B) National Steel-Great Lakes, Battery No. 4; and

(C) Koppers-Woodward, Battery No. 3.

(vi) To retain the exclusion provided in paragraph (b)(4)(v) of this section, a coke oven battery specified in paragraph (b)(4)(v) of this section shall commence construction not later than July 1, 1996, or 1 year after obtaining a construction permit, whichever is earlier.

(5) The owner or operator of a cold-idle coke oven battery that shut down on or after November 15, 1990, shall comply with the following emission limitations:

(i) For a brownfield coke oven battery or a padup rebuild coke oven battery, coke oven emissions shall not exceed the emission limitations in paragraph (b)(4) of this section; and

(ii) For a cold-idle battery other than a brownfield or padup rebuild coke oven battery, coke oven emissions shall not exceed the emission limitations in paragraphs (b)(1) through (b)(3) of this section.

(6) The owner or operator of a cold-idle coke oven battery that shut down prior to November 15, 1990, shall submit a written request to the Administrator to include the battery in the design capacity of a coke plant as of November 15, 1990. A copy of the request shall also be sent to Director, Office of Air Quality Planning and Standards, U.S. Environmental Protection Agency, Research Triangle Park, NC 27711. The Administrator will review and approve or disapprove a request according to the following procedures:

(i) Requests will be reviewed for completeness in the order received. A complete request shall include:

(A) Battery identification;

(B) Design information, including the design capacity and number and size of ovens; and

(C) A brief description of the owner or operator's plans for the cold-idle battery, including a statement whether construction of a padup rebuild or a brownfield coke oven battery is contemplated.

(ii) A complete request shall be approved if the design capacity of the battery and the design capacity of all previous approvals does not exceed the capacity limit in paragraph (b)(6)(iii) of this section.

(iii) The total nationwide coke capacity of coke oven batteries that receive approval under paragraph (b)(6) of this section shall not exceed 2.7 million Mg/yr.

(iv) If a construction permit is required, an approval shall lapse if a construction permit is not issued within 3 years of the approval date, or if the construction permit lapses.

(v) If a construction permit is not required, an approval will lapse if the battery is not restarted within 2 years of the approval date.

The owner or operator of a by-product coke oven battery with fewer than 30 ovens may elect to comply with an emission limitation of 2 or fewer leaking coke oven doors, as determined by the procedures in § 63.309(d)(4), as an alternative to the emission limitation for coke oven doors in paragraphs (b)(2)(i), (b)(3)(i) through (ii), (b)(4)(i), (b)(5), and (b)(6) of this section.

(c) On and after November 15, 1993, no owner or operator shall cause to be discharged or allow to be discharged to the atmosphere coke oven emissions from an existing nonrecovery coke oven battery that exceed any of the emission limitations or requirements in § 63.303(a).

(d) Each owner or operator of an existing coke oven battery qualifying for a compliance date extension pursuant to this section shall make available, no later than January 1, 2000, to the surrounding communities the results of any risk assessment performed by the Administrator to determine the appropriate level of any emission standard established by the Administrator according to section 112(f) of the Act.

**§ 63.305 Alternative standards for coke oven doors equipped with sheds.**

(a) The owner or operator of a new or existing coke oven battery equipped with a shed for the capture of coke oven emissions from coke oven doors and an emission control device for the collection of the emissions may comply with an alternative to the applicable visible emission limitations for coke oven doors in §§ 63.302 and 63.304 according to the procedures and requirements in this section.

(b) To qualify for approval of an alternative standard, the owner or operator shall submit to the Administrator a test plan for the measurement of emissions. A copy of the request shall also be sent to the Director, Office of Air Quality Planning and Standards, U.S. Environmental Protection Agency, Research Triangle Park, NC 27711. The plan shall describe the procedures to be used for the measurement of particulate matter; the parameters to be

measured that affect the shed exhaust rate (e.g., damper settings, fan power) and the procedures for measuring such parameters; and if applicable under paragraph (c)(5)(ii) of this section, the procedures to be used for the measurement of benzene soluble organics, benzene, toluene, and xylene emitted from the control device for the shed. The owner or operator shall notify the Administrator at least 30 days before any performance test is conducted.

(c) A complete test plan is deemed approved if no disapproval is received within 60 days of the submittal to the Administrator. After approval of the test plan, the owner or operator shall:

(1) Determine the efficiency of the control device for removal of particulate matter by conducting measurements at the inlet and the outlet of the emission control device using Method 5 in appendix A to part 60 of this chapter, with the filter box operated at ambient temperature and in a manner to avoid condensation, with a backup filter;

(2) Measure the visible emissions from coke oven doors that escape capture by the shed using Method 22 in appendix A to part 60 of this chapter. For the purpose of approval of an alternative standard, no visible emissions may escape capture from the shed.

(i) Visible emission observations shall be taken during conditions representative of normal operations, except that pushing shall be suspended and pushing emissions shall have cleared the shed; and

(ii) Method 22 observations shall be performed by an observer certified according to the requirements of Method 9 in appendix A to part 60 of this chapter. The observer shall allow pushing emissions to be evacuated (typically 1 to 2 minutes) before making observations;

(3) Measure the opacity of emissions from the control device using Method 9 in appendix A to part 60 of this chapter during conditions representative of normal operations, including pushing; and

(i) If the control device has multiple stacks, the owner or operator shall use an evaluation based on visible emissions and opacity to select the stack

with the highest opacity for testing under this section;

(ii) The highest opacity, expressed as a 6-minute average, shall be used as the opacity standard for the control device.

(4) Thoroughly inspect all compartments of each air cleaning device prior to the performance test for proper operation and for changes that signal the potential for malfunction, including the presence of tears, holes, and abrasions in filter bags; damaged seals; and for dust deposits on the clean side of bags; and

(5) Determine the allowable percent leaking doors under the shed using either of the following procedures:

(i) Calculate the allowable percent leaking doors using the following equation:

$$PLD = \left[ \frac{1.4(PLD_{std})^{2.5}}{(1.4 - \text{eff} / 100)} \right]^{0.4} \quad (\text{Eq. 1})$$

where

PLD=Allowable percent leaking doors for alternative standard.

PLD<sub>std</sub>=Applicable visible emission limitation of percent leaking doors under this subpart that would otherwise apply to the coke oven battery, converted to the single-run limit according to Table 1.

eff=Percent control efficiency for particulate matter for emission control device as determined according to paragraph (c)(1) of this section.

Table 1—CONVERSION TO SINGLE-RUN LIMIT

| 30-run limit | Single-pass limit (98 percent level) |
|--------------|--------------------------------------|
| 7.0          | 11.0                                 |
| 6.0          | 9.5                                  |
| 5.5          | 8.7                                  |
| 5.0          | 8.1                                  |
| 4.3          | 7.2                                  |
| 4.0          | 6.7                                  |
| 3.8          | 6.4                                  |
| 3.3          | 5.8                                  |

or;

(ii) Calculate the allowable percent leaking doors using the following procedures:

(A) Measure the total emission rate of benzene, toluene, and xylene exiting

the control device using Method 18 in appendix A to part 60 of this chapter and the emission rate of benzene soluble organics entering the control device as described in the test plan submitted pursuant to paragraph (b) of this section; or

(B) Measure benzene, toluene, xylene, and benzene soluble organics in the gas in the collector main as described in the test plan submitted pursuant to paragraph (b) of this section; and

(C) Calculate the ratio (R) of benzene, toluene, and xylene to benzene soluble organics for the gas in the collector main, or as the sum of the outlet emission rates of benzene, toluene, and xylene, divided by the emission rate of benzene soluble organics as measured at the inlet to the control device; and

(D) Calculate the allowable percent leaking doors limit under the shed using the following equation:

$$PLD = \left[ \frac{(R + 1)(PLD_{std})^{2.5}}{(R + 1 - \text{eff} / 100)} \right]^{0.4} \quad (\text{Eq. 2})$$

where

R=Ratio of measured emissions of benzene, toluene, and xylene to measured emissions of benzene soluble organics.

(iii) If the allowable percent leaking coke oven doors is calculated to exceed 15 percent leaking coke oven doors under paragraphs (c)(5)(i) or (c)(5)(ii) of this section, the owner or operator shall use 15 percent leaking coke oven doors for the purposes of this section.

(6) Monitor the parameters that affect the shed exhaust flow rate.

(7) The owner or operator may request alternative sampling procedures to those specified in paragraph (c)(5)(ii) (A) and (B) of this section by submitting details on the procedures and the rationale for their use to the Administrator. Alternative procedures shall not be used without approval from the Administrator.

(8) The owner or operator shall inform the Administrator of the schedule for conducting testing under the approved test plan and give the Administrator the opportunity to observe the tests.

(d) After calculating the alternative standard for allowable percent leaking

coke oven doors, the owner or operator shall submit the following information to the Administrator:

(1) Identity of the coke oven battery;

(2) Visible emission limitation(s) for percent leaking doors currently applicable to the coke oven battery under this subpart and known future limitations for percent leaking coke oven doors;

(3) A written report including:

(i) Appropriate measurements and calculations used to derive the allowable percent leaking coke oven doors requested as the alternative standard;

(ii) Appropriate visible emission observations for the shed and opacity observations for the control device for the shed, including an alternative opacity standard, if applicable, as described in paragraph (c)(3) of this section based on the highest 6-minute average; and

(iii) The parameter or parameters (e.g., fan power, damper position, or other) to be monitored and recorded to demonstrate that the exhaust flow rate measured during the test required by paragraph (c)(1) of this section is maintained, and the monitoring plan for such parameter(s).

(iv) If the application is for a new shed, one of the following demonstrations:

(A) A demonstration, using modeling procedures acceptable to the Administrator, that the expected concentrations of particulate emissions (including benzene soluble organics) under the shed at the bench level, when the proposed alternative standard was being met, would not exceed the expected concentrations of particulate emissions (including benzene soluble organics) if the shed were not present, the regulations under this subpart were met, and the battery was in compliance with federally enforceable limitations on pushing emissions; or

(B) A demonstration that the shed (including the evacuation system) has been designed in accordance with generally accepted engineering principles for the effective capture and control of particulate emissions (including benzene soluble organics) as measured at the shed's perimeter, its control device, and at the bench level.

(e) The Administrator will review the information and data submitted according to paragraph (d) of this section and may request additional information and data within 60 days of receipt of a complete request.

(1) Except for applications subject to paragraph (e)(3) of this section, the Administrator shall approve or disapprove an alternative standard as expeditiously as practicable. The Administrator shall approve an alternative standard, unless the Administrator determines that the approved test plan has not been followed, or any required calculations are incorrect, or any demonstration required under paragraph (d)(3)(iv) of this section does not satisfy the applicable criteria under that paragraph. If the alternative standard is disapproved, the Administrator will issue a written notification to the owner or operator within the 60-day period.

(2) The owner or operator shall comply with the applicable visible emission limitation for coke oven doors and all other requirements in this subpart prior to approval of an alternative standard. The owner or operator may apply for an alternative standard at any time after December 4, 1992.

(3) An application for an alternative standard to the standard in §63.304(b)(1)(i) for any shed that is not a new shed that is filed on or before June 15, 1993, is deemed approved if a notice of disapproval has not been received 60 days after submission of a complete request. An approval under paragraph (e)(3) of this section shall be valid for a period of 1 year.

(4) Notwithstanding the provisions of paragraph (e) of this section, no alternative standard shall be approved that exceeds 15 percent leaking coke oven doors (yard equivalent).

(f) After approval of an alternative standard, the owner or operator shall comply with the following requirements:

(1) The owner or operator shall not discharge or allow to be discharged to the atmosphere coke oven emissions from coke oven doors under sheds that exceed an approved alternative standard for percent leaking coke oven doors under sheds.

(i) All visible emission observations for compliance determinations shall be performed by a certified observer.

(ii) Compliance with the alternative standard for doors shall be determined by a weekly performance test conducted according to the procedures and requirements in § 63.309(d)(5) and Method 303 in appendix A to this part.

(iii) If the visible emission limitation is achieved for 12 consecutive observations, compliance shall be determined by monthly rather than weekly performance tests. If any exceedance occurs during a performance test, weekly performance tests shall be resumed.

(iv) Observations taken at times other than those specified in paragraphs (f)(1)(ii) and (f)(1)(iii) of this section shall be subject to the provisions of § 63.309(f).

(2) The certified observer shall monitor the visible coke oven emissions escaping capture by the shed on a weekly basis. The provision in paragraph (f)(6) of this section is applicable if visible coke oven emissions are observed during periods when pushing emissions have cleared the shed.

(3) The owner or operator shall not discharge or allow to be discharged to the atmosphere any visible emissions from the shed's control device exhibiting more than 0 percent opacity unless an alternative limit has been approved under paragraph (e) of this section.

(4) The opacity of emissions from the control device for the shed shall be monitored in accordance with the requirements of either paragraph (f)(4)(i) or (f)(4)(ii) of this section, at the election of the owner or operator.

(i) The owner or operator shall install, operate, and maintain a continuous opacity monitor, and record the output of the system, for the measurement of the opacity of emissions discharged from the emission control system.

(A) Each continuous opacity monitoring system shall meet the requirements of Performance Specification 1 in appendix B to part 60 of this chapter; and

(B) Each continuous opacity monitoring system shall be operated, calibrated, and maintained according to the procedures and requirements specified in part 52 of this chapter; or

(ii) A certified observer shall monitor and record at least once each day during daylight hours, opacity observations for the control device for the shed using Method 9 in appendix A to part 60 of this chapter.

(5) The owner or operator shall visually inspect the structural integrity of the shed at least once a quarter for defects, such as deterioration of sheet metal (e.g., holes in the shed), that may allow the escape of visible emissions.

(i) The owner or operator shall record the time and date a defect is first observed, the time and date the defect is corrected or repaired, and a brief description of repairs or corrective actions taken;

(ii) The owner or operator shall temporarily repair the defect as soon as possible, but no later than 5 days after detection of the defect;

(iii) Unless a major repair is required, the owner or operator shall perform a complete repair of the defect within 15 days of detection of the defect. If a major repair is required (e.g., replacement of large sections of the shed), the owner or operator shall submit a repair schedule to the enforcement agency.

(6) If the no visible emission limit for the shed specified in paragraph (f)(2) of this section is exceeded, the Administrator may require another test for the shed according to the approved test plan as specified in paragraph (c) of this section. If the certified observer observes visible coke oven emissions from the shed, except during periods of pushing or when pushing emissions have not cleared the shed, the owner or operator shall check to ensure that the shed and control device are working properly.

(7) The owner or operator shall monitor the parameter(s) affecting shed exhaust flow rate, and record data, in accordance with the approved monitoring plan for these parameters.

(8) The owner or operator shall not operate the exhaust system of the shed at an exhaust flow rate lower than that measured during the test required under paragraph (c)(1) of this section, as indicated by the monitored parameters.

(g) Each side of a battery subject to an alternative standard for doors under

this section shall be treated separately for purposes of §§ 63.306(c) (plan implementation) and 63.306(d) (plan revisions) of this subpart. In making determinations under these provisions for the side of the battery subject to an alternative standard, the requirement that exceedances be independent shall not apply. During any period when work practices for doors for both sides of the battery are required to be implemented, § 63.306(a)(3) shall apply in the same manner as if the provisions of a plan for a single emissions point were required to be implemented. Exceedances of the alternative standard for percent leaking doors under a shed is the only provision in this section implicating implementation of work practice requirements.

(h) Multiple exceedances of the visible emission limitation for door leaks and/or the provisions of an alternative standard under this section for door leaks at a battery on a single day shall be considered a single violation.

**§ 63.306 Work practice standards.**

(a) *Work practice plan.* On or before November 15, 1993, each owner or operator shall prepare and submit to the Administrator a written emission control work practice plan for each coke oven battery. The plan shall be designed to achieve compliance with visible emission limitations for coke oven doors, topside port lids, offtake systems, and charging operations under this subpart or, for a coke oven battery not subject to visible emission limitations under this subpart, other federally enforceable visible emission limitations for these emission points.

(1) The work practice plan must address each of the topics specified in paragraph (b) of this section in sufficient detail and with sufficient specificity to allow the Administrator to evaluate the plan for completeness and enforceability.

(2) The Administrator may require revisions to the initial plan only where the Administrator finds either that the plan does not address each subject area listed in paragraph (b) of this section for each emission point subject to a visible emission standard under this subpart, or that the plan is unenforce-

able because it contains requirements that are unclear.

(3) During any period of time that an owner or operator is required to implement the provisions of a plan for a particular emission point, the failure to implement one or more obligations under the plan and/or any record-keeping requirement(s) under § 63.311(f)(4) for the emission point during a particular day is a single violation.

(b) *Plan components.* The owner or operator shall organize the work practice plan to indicate clearly which parts of the plan pertain to each emission point subject to visible emission standards under this subpart. Each of the following provisions, at a minimum, shall be addressed in the plan:

(1) An initial and refresher training program for all coke plant operating personnel with responsibilities that impact emissions, including contractors, in job requirements related to emission control and the requirements of this subpart, including work practice requirements. Contractors with responsibilities that impact emission control may be trained by the owner or operator or by qualified contractor personnel; however, the owner or operator shall ensure that the contractor training program complies with the requirements of this section. The training program in the plan must include:

(i) A list, by job title, of all personnel that are required to be trained and the emission point(s) associated with each job title;

(ii) An outline of the subjects to be covered in the initial and refresher training for each group of personnel;

(iii) A description of the training method(s) that will be used (e.g., lecture, video tape);

(iv) A statement of the duration of initial training and the duration and frequency of refresher training;

(v) A description of the methods to be used at the completion of initial or refresher training to demonstrate and document successful completion of the initial and refresher training; and

(vi) A description of the procedure to be used to document performance of plan requirements pertaining to daily operation of the coke oven battery and

its emission control equipment, including a copy of the form to be used, if applicable, as required under the plan provisions implementing paragraph (b)(7) of this section.

(2) Procedures for controlling emissions from coke oven doors on by-product coke oven batteries, including:

(i) A program for the inspection, adjustment, repair, and replacement of coke oven doors and jambs, and any other equipment for controlling emissions from coke oven doors, including a defined frequency of inspections, the method to be used to evaluate conformance with operating specifications for each type of equipment, and the method to be used to audit the effectiveness of the inspection and repair program for preventing exceedances;

(ii) Procedures for identifying leaks that indicate a failure of the emissions control equipment to function properly, including a clearly defined chain of command for communicating information on leaks and procedures for corrective action;

(iii) Procedures for cleaning all sealing surfaces of each door and jamb, including identification of the equipment that will be used and a specified schedule or frequency for the cleaning of sealing surfaces;

(iv) For batteries equipped with self-sealing doors, procedures for use of supplemental gasketing and luting materials, if the owner or operator elects to use such procedures as part of the program to prevent exceedances;

(v) For batteries equipped with hand-luted doors, procedures for luting and reluting, as necessary to prevent exceedances;

(vi) Procedures for maintaining an adequate inventory of the number of spare coke oven doors and jambs located onsite; and

(vii) Procedures for monitoring and controlling collecting main back pressure, including corrective action if pressure control problems occur.

(3) Procedures for controlling emissions from charging operations on by-product coke oven batteries, including:

(i) Procedures for equipment inspection, including the frequency of inspections, and replacement or repair of equipment for controlling emissions from charging, the method to be used

to evaluate conformance with operating specifications for each type of equipment, and the method to be used to audit the effectiveness of the inspection and repair program for preventing exceedances;

(ii) Procedures for ensuring that the larry car hoppers are filled properly with coal;

(iii) Procedures for the alignment of the larry car over the oven to be charged;

(iv) Procedures for filling the oven (e.g., procedures for staged or sequential charging);

(v) Procedures for ensuring that the coal is leveled properly in the oven; and

(vi) Procedures and schedules for inspection and cleaning of offtake systems (including standpipes, standpipe caps, goosenecks, dampers, and mains), oven roofs, charging holes, topside port lids, the steam supply system, and liquor sprays.

(4) Procedures for controlling emissions from topside port lids on by-product coke oven batteries, including:

(i) Procedures for equipment inspection and replacement or repair of topside port lids and port lid mating and sealing surfaces, including the frequency of inspections, the method to be used to evaluate conformance with operating specifications for each type of equipment, and the method to be used to audit the effectiveness of the inspection and repair program for preventing exceedances; and

(ii) Procedures for sealing topside port lids after charging, for identifying topside port lids that leak, and procedures for resealing.

(5) Procedures for controlling emissions from offtake system(s) on by-product coke oven batteries, including:

(i) Procedures for equipment inspection and replacement or repair of offtake system components, including the frequency of inspections, the method to be used to evaluate conformance with operating specifications for each type of equipment, and the method to be used to audit the effectiveness of the inspection and repair program for preventing exceedances;

(ii) Procedures for identifying offtake system components that leak and procedures for sealing leaks that are detected; and

(iii) Procedures for dampering off ovens prior to a push.

(6) Procedures for controlling emissions from nonrecovery coke oven batteries including:

(i) Procedures for charging coal into the oven, including any special procedures for minimizing air infiltration during charging, maximizing the draft on the oven, and for replacing the door promptly after charging;

(ii) If applicable, procedures for the capture and control of charging emissions;

(iii) Procedures for cleaning coke from the door sill area for both sides of the battery after completing the pushing operation and before replacing the coke oven door;

(iv) Procedures for cleaning coal from the door sill area after charging and before replacing the push side door;

(v) Procedures for filling gaps around the door perimeter with sealant material, if applicable; and

(vi) Procedures for detecting and controlling emissions from smoldering coal.

(7) Procedures for maintaining, for each emission point subject to visible emission limitations under this subpart, a daily record of the performance of plan requirements pertaining to the daily operation of the coke oven battery and its emission control equipment, including:

(i) Procedures for recording the performance of such plan requirements; and

(ii) Procedures for certifying the accuracy of such records by the owner or operator.

(8) Any additional work practices or requirements specified by the Administrator according to paragraph (d) of this section.

(c) *Implementation of work practice plans.* On and after November 15, 1993, the owner or operator of a coke oven battery shall implement the provisions of the coke oven emission control work practice plan according to the following requirements:

(1) The owner or operator of a coke oven battery subject to visible emis-

sion limitations under this subpart on and after November 15, 1993, shall:

(i) Implement the provisions of the work practice plan pertaining to a particular emission point following the second independent exceedance of the visible emission limitation for the emission point in any consecutive 6-month period, by no later than 3 days after receipt of written notification of the second such exceedance from the certified observer. For the purpose of this paragraph (c)(1)(i), the second exceedance is "independent" if either of the following criteria is met:

(A) The second exceedance occurs 30 days or more after the first exceedance;

(B) In the case of coke oven doors, topside port lids, and offtake systems, the 29-run average, calculated by excluding the highest value in the 30-day period, exceeds the value of the applicable emission limitation; or

(C) In the case of charging emissions, the 29-day logarithmic average, calculated in accordance with Method 303 in appendix A to this part by excluding the valid daily set of observations in the 30-day period that had the highest arithmetic average, exceeds the value of the applicable emission limitation.

(ii) Continue to implement such plan provisions until the visible emission limitation for the emission point is achieved for 90 consecutive days if work practice requirements are implemented pursuant to paragraph (c)(1)(i) of this section. After the visible emission limitation for a particular emission point is achieved for 90 consecutive days, any exceedances prior to the beginning of the 90 days are not included in making a determination under paragraph (c)(1)(i) of this section.

(2) The owner or operator of a coke oven battery not subject to visible emission limitations under this subpart until December 31, 1995, shall:

(i) Implement the provisions of the work practice plan pertaining to a particular emission point following the second exceedance in any consecutive 6-month period of a federally enforceable emission limitation for that emission point for coke oven doors, topside port lids, offtake systems, or charging operations by no later than 3 days after

receipt of written notification from the applicable enforcement agency; and

(ii) Continue to implement such plan provisions for 90 consecutive days after the most recent written notification from the enforcement agency of an exceedance of the visible emission limitation.

(d) *Revisions to plan.* Revisions to the work practice emission control plan will be governed by the provisions in this paragraph (d) and in paragraph (a)(2) of this section.

(1) The Administrator may request the owner or operator to review and revise as needed the work practice emission control plan for a particular emission point if there are 2 exceedances of the applicable visible emission limitation in the 6-month period that starts 30 days after the owner or operator is required to implement work practices under paragraph (c) of this section. In the case of a coke oven battery subject to visual emission limitations under this subpart, the second exceedance must be independent under the criteria in paragraph (c)(1)(i) of this section.

(2) The Administrator may not request the owner or operator to review and revise the plan more than twice in any 12 consecutive month period for any particular emission point unless the Administrator disapproves the plan according to the provisions in paragraph (d)(6) of this section.

(3) If the certified observer calculates that a second exceedance (or, if applicable, a second independent exceedance) has occurred, the certified observer shall notify the owner or operator. No later than 10 days after receipt of such a notification, the owner or operator shall notify the Administrator of any finding of whether work practices are related to the cause or the solution of the problem. This notification is subject to review by the Administrator according to the provisions in paragraph (d)(6) of this section.

(4) The owner or operator shall submit a revised work practice plan within 60 days of notification from the Administrator under paragraph (d)(1) of this section, unless the Administrator grants an extension of time to submit the revised plan.

(5) If the Administrator requires a plan revision, the Administrator may

require the plan to address a subject area or areas in addition to those in paragraph (b) of this section, if the Administrator determines that without plan coverage of such an additional subject area, there is a reasonable probability of further exceedances of the visible emission limitation for the emission point for which a plan revision is required.

(6) The Administrator may disapprove a plan revision required under paragraph (d) of this section if the Administrator determines that the revised plan is inadequate to prevent exceedances of the visible emission limitation under this subpart for the emission point for which a plan revision is required or, in the case of a battery not subject to visual emission limitations under this subpart, other federally enforceable emission limitations for such emission point. The Administrator may also disapprove the finding that may be submitted pursuant to paragraph (d)(3) of this section if the Administrator determines that a revised plan is needed to prevent exceedances of the applicable visible emission limitations.

**§ 63.307 Standards for bypass/bleeder stacks.**

(a)(1) Except as otherwise provided in this section, on or before March 31, 1994, the owner or operator of an existing by-product recovery battery for which a notification was not submitted under paragraph (e)(1) of this section shall install a bypass/bleeder stack flare system that is capable of controlling 120 percent of the normal gas flow generated by the battery, which shall thereafter be operated and maintained.

(2) Coke oven emissions shall not be vented to the atmosphere through bypass/bleeder stacks, except through the flare system or the alternative control device as described in paragraph (d) of this section.

(3) The owner or operator of a brownfield coke oven battery or a padup rebuild shall install such a flare system before startup, and shall properly operate and maintain the flare system.

(b) Each flare installed pursuant to this section shall meet the following requirements:

(1) Each flare shall be designed for a net heating value of 8.9 MJ/scm (240 Btu/scf) if a flare is steam-assisted or air-assisted, or a net value of 7.45 MJ/scm (200 Btu/scf) if the flare is non-assisted.

(2) Each flare shall have either a continuously operable pilot flame or an electronic igniter that meets the requirements of paragraphs (b)(3) and (b)(4) of this section.

(3) Each electronic igniter shall meet the following requirements:

(i) Each flare shall be equipped with at least two igniter plugs with redundant igniter transformers;

(ii) The ignition units shall be designed failsafe with respect to flame detection thermocouples (i.e., any flame detection thermocouples are used only to indicate the presence of a flame, are not interlocked with the ignition unit, and cannot deactivate the ignition system); and

(iii) Integral battery backup shall be provided to maintain active ignition operation for a minimum of 15 minutes during a power failure.

(iv) Each electronic igniter shall be operated to initiate ignition when the bleeder valve is not fully closed as indicated by an "OPEN" limit switch.

(4) Each flare installed to meet the requirements of this paragraph (b) that does not have an electronic igniter shall be operated with a pilot flame present at all times as determined by § 63.309(h)(2).

(c) Each flare installed to meet the requirements of this section shall be operated with no visible emissions, as determined by the methods specified in § 63.309(h)(1), except for periods not to exceed a total of 5 minutes during any 2 consecutive hours.

(d) As an alternative to the installation, operation, and maintenance of a flare system as required in paragraph (a) of this section, the owner or operator may petition the Administrator for approval of an alternative control device or system that achieves at least 98 percent destruction or control of coke oven emissions vented to the alternative control device or system.

(e) The owner or operator of a by-product coke oven battery is exempt from the requirements of this section if the owner or operator:

(1) Submits to the Administrator, no later than November 10, 1993, a formal commitment to close the battery permanently; and

(2) Closes the battery permanently no later than December 31, 1995. In no case may the owner or operator continue to operate a battery for which a closure commitment is submitted, past December 31, 1995.

(f) Any emissions resulting from the installation of flares (or other pollution control devices or systems approved pursuant to paragraph (d) of this section) shall not be used in making new source review determinations under part C and part D of title I of the Act.

#### **§ 63.308 Standards for collecting mains.**

(a) On and after November 15, 1993, the owner or operator of a by-product coke oven battery shall inspect the collecting main for leaks at least once daily according to the procedures in Method 303 in appendix A to this part.

(b) The owner or operator shall record the time and date a leak is first observed, the time and date the leak is temporarily sealed, and the time and date of repair.

(c) The owner or operator shall temporarily seal any leak in the collecting main as soon as possible after detection, but no later than 4 hours after detection of the leak.

(d) The owner or operator shall initiate a collecting main repair as expeditiously as possible, but no later than 5 calendar days after initial detection of the leak. The repair shall be completed within 15 calendar days after initial detection of the leak unless an alternative schedule is approved by the Administrator.

#### **§ 63.309 Performance tests and procedures.**

(a) Except as otherwise provided, a daily performance test shall be conducted each day, 7 days per week for each new and existing coke oven battery, the results of which shall be used in accordance with procedures specified in this subpart to determine compliance with each of the applicable visible emission limitations for coke oven

doors, topside port lids, offtake systems, and charging operations in this subpart. If a facility pushes and charges only at night, then that facility must, at its option, change their schedule and charge during daylight hours or provide adequate lighting so that visible emission inspections can be made at night. "Adequate lighting" will be determined by the enforcement agency.

(1) Each performance test is to be conducted according to the procedures and requirements in this section and in Method 303 or 303A in appendix A to this part or Methods 9 and 22 in appendix A to part 60 of this chapter (where applicable).

(2) Each performance test is to be conducted by a certified observer.

(3) The certified observer shall complete any reasonable safety training program offered by the owner or operator prior to conducting any performance test at a coke oven battery.

(4) Except as otherwise provided in paragraph (a)(5) of this section, the owner or operator shall pay an inspection fee to the enforcement agency each calendar quarter to defray the costs of the daily performance tests required under paragraph (a) of this section.

(i) The inspection fee shall be determined according to the following formula:

$$F = H \times S \quad (\text{Eq. 3})$$

where

F=Fees to be paid by owner or operator.

H=Total person hours for inspections: 4 hours for 1 coke oven battery, 6.25 hours for 2 coke oven batteries, 8.25 hours for 3 coke oven batteries. For more than 3 coke oven batteries, use these hours to calculate the appropriate estimate of person hours.

S=Current average hourly rate for private visible emission inspectors in the relevant market.

(ii) The enforcement agency may revise the value for H in equation 3 within 3 years after October 27, 1993 to reflect the amount of time actually required to conduct the inspections required under paragraph (a) of this section.

(iii) The owner or operator shall not be required to pay an inspection fee (or any part thereof) under paragraph (a)(4) of this section, for any monitoring or inspection services required by paragraph (a) of this section that the owner or operator can demonstrate are covered by other fees collected by the enforcement agency.

(iv) Upon request, the enforcement agency shall provide the owner or operator information concerning the inspection services covered by any other fees collected by the enforcement agency, and any information relied upon under paragraph (a)(4)(ii) of this section.

(5)(i) The EPA shall be the enforcement agency during any period of time that a delegation of enforcement authority is not in effect or a withdrawal of enforcement authority under §63.313 is in effect, and the Administrator is responsible for performing the inspections required by this section, pursuant to §63.313(b).

(ii) Within thirty (30) days of receiving notification from the Administrator that the EPA is the enforcement agency for a coke oven battery, the owner or operator shall enter into a contract providing for the inspections and performance tests required under this section to be performed by a Method 303 certified observer. The inspections and performance tests will be conducted at the expense of the owner or operator, during the period that the EPA is the implementing agency.

(b) The enforcement agency shall commence daily performance tests on the applicable date specified in §63.300 (a) or (c).

(c) The certified observer shall conduct each performance test according to the requirements in this paragraph:

(1) The certified observer shall conduct one run each day to observe and record visible emissions from each coke oven door (except for doors covered by an alternative standard under §63.305), topside port lid, and offtake system on each coke oven battery. The certified observer also shall conduct five runs to observe and record the seconds of visible emissions per charge for five consecutive charges from each coke oven battery. The observer may perform additional runs as needed to

obtain and record a visible emissions value (or set of values) for an emission point that is valid under Method 303 or Method 303A in appendix A to this part. Observations from fewer than five consecutive charges shall constitute a valid set of charging observations only in accordance with the procedures and conditions specified in sections 3.8 and 3.9 of Method 303 in appendix A to this part.

(2) If a valid visible emissions value (or set of values) is not obtained for a performance test, there is no compliance determination for that day. Compliance determinations will resume on the next day that a valid visible emissions value (or set of values) is obtained.

(3) After each performance test for a by-product coke oven battery, the certified observer shall check and record the collecting main pressure according to the procedures in section 6.3 of Method 303 in appendix A to this part.

(i) The owner or operator shall demonstrate pursuant to Method 303 in appendix A to this part the accuracy of the pressure measurement device upon request of the certified observer;

(ii) The owner or operator shall not adjust the pressure to a level below the range of normal operation during or prior to the inspection;

(4) The certified observer shall monitor visible emissions from coke oven doors subject to an alternative standard under §63.305 on the schedule specified in §63.305(f).

(5) If applicable, the certified observer shall monitor the opacity of any emissions escaping the control device for a shed covering doors subject to an alternative standard under §63.305 on the schedule specified in §63.305(f).

(6) In no case shall the owner or operator knowingly block a coke oven door, or any portion of a door for the purpose of concealing emissions or preventing observations by the certified observer.

(d) Using the observations obtained from each performance test, the enforcement agency shall compute and record, in accordance with the procedures and requirements of Method 303 or 303A in appendix A to this part, for each day of operations on which a valid emissions value (or set of values) is obtained:

(1) The 30-run rolling average of the percent leaking coke oven doors, top-side port lids, and offtake systems on each coke oven battery, using the equations in sections 4.5.3.2, 5.6.5.2, and 5.6.6.2 of Method 303 (or section 3.4.3.2 of Method 303A) in appendix A to this part;

(2) For by-product coke oven battery charging operations, the logarithmic 30-day rolling average of the seconds of visible emissions per charge for each battery, using the equation in section 3.9 of Method 303 in appendix A to this part;

(3) For a battery subject to an alternative emission limitation for coke oven doors on by-product coke oven batteries pursuant to §63.305, the 30-run rolling average of the percent leaking coke oven doors for any side of the battery not subject to such alternative emission limitation;

(4) For a by-product coke oven battery subject to the small battery emission limitation for coke oven doors pursuant to §63.304(b)(7), the 30-run rolling average of the number of leaking coke oven doors;

(5) For an approved alternative emission limitation for coke oven doors according to §63.305, the weekly or monthly observation of the percent leaking coke oven doors using Method 303 in appendix A to this part, the percent opacity of visible emissions from the control device for the shed using Method 9 in appendix A to part 60 of this chapter, and visible emissions from the shed using Method 22 in appendix A to part 60 of this chapter;

(e) The certified observer shall make available to the implementing agency as well as to the owner or operator, a copy of the daily inspection results by the end of the day and shall make available the calculated rolling average for each emission point to the owner or operator as soon as practicable following each performance test. The information provided by the certified observer is not a compliance determination. For the purpose of notifying an owner or operator of the results obtained by a certified observer, the person does not have to be certified.

(f) Compliance shall not be determined more often than the schedule

provided for performance tests under this section. If additional valid emissions observations are obtained (or in the case of charging, valid sets of emission observations), the arithmetic average of all valid values (or valid sets of values) obtained during the day shall be used in any computations performed to determine compliance under paragraph (d) of this section or determinations under § 63.306.

(g) Compliance with the alternative standards for nonrecovery coke oven batteries in § 63.303; shed inspection, maintenance requirements, and monitoring requirements for parameters affecting the shed exhaust flow rate for batteries subject to alternative standards for coke oven doors under § 63.305; work practice emission control plan requirements in § 63.306; standards for bypass/bleeder stacks in § 63.307; and standards for collecting mains in § 63.308 is to be determined by the enforcement agency based on review of records and inspections.

(h) For a flare installed to meet the requirements of § 63.307(b):

(1) Compliance with the provisions in § 63.307(c) (visible emissions from flares) shall be determined using Method 22 in appendix A to part 60 of this chapter, with an observation period of 2 hours; and

(2) Compliance with the provisions in § 63.307(b)(4) (flare pilot light) shall be determined using a thermocouple or any other equivalent device.

(i) No observations obtained during any program for training or for certifying observers under this subpart shall be used to determine compliance with the requirements of this subpart or any other federally enforceable standard.

**§ 63.310 Requirements for startups, shutdowns, and malfunctions.**

(a) At all times including periods of startup, shutdown, and malfunction, the owner or operator shall operate and maintain the coke oven battery and its pollution control equipment required under this subpart, in a manner consistent with good air pollution control practices for minimizing emissions to the levels required by any applicable performance standards under this subpart. Failure to adhere to the requirement of this paragraph shall not con-

stitute a separate violation if a violation of an applicable performance or work practice standard has also occurred.

(b) Each owner or operator of a coke oven battery shall develop and implement according to paragraph (c) of this section, a written startup, shutdown, and malfunction plan that describes procedures for operating the battery, including associated air pollution control equipment, during a period of a startup, shutdown, or malfunction in a manner consistent with good air pollution control practices for minimizing emissions, and procedures for correcting malfunctioning process and air pollution control equipment as quickly as practicable.

(c) During a period of startup, shutdown, or malfunction:

(1) The owner or operator of a coke oven battery shall operate the battery (including associated air pollution control equipment) in accordance with the procedure specified in the startup, shutdown, and malfunction plan; and

(2) Malfunctions shall be corrected as soon as practicable after their occurrence, in accordance with the plan.

(d) In order for the provisions of paragraph (i) of this section to apply with respect to the observation (or set of observations) for a particular day, notification of a startup, shutdown, or a malfunction shall be made by the owner or operator:

(1) If practicable, to the certified observer if the observer is at the facility during the occurrence; or

(2) To the enforcement agency, in writing, within 24 hours of the occurrence first being documented by a company employee, and if the notification under paragraph (d)(1) of this section was not made, an explanation of why no such notification was made.

(e) Within 14 days of the notification made under paragraph (d) of this section, or after a startup or shutdown, the owner or operator shall submit a written report to the applicable permitting authority that:

(1) Describes the time and circumstances of the startup, shutdown, or malfunction; and

(2) Describes actions taken that might be considered inconsistent with

the startup, shutdown, or malfunction plan.

(f) The owner or operator shall maintain a record of internal reports which form the basis of each malfunction notification under paragraph (d) of this section.

(g) To satisfy the requirements of this section to develop a startup, shutdown, and malfunction plan, the owner or operator may use the standard operating procedures manual for the battery, provided the manual meets all the requirements for this section and is made available for inspection at reasonable times when requested by the Administrator.

(h) The Administrator may require reasonable revisions to a startup, shutdown, and malfunction plan, if the Administrator finds that the plan:

(1) Does not address a startup, shutdown, or malfunction event that has occurred;

(2) Fails to provide for the operation of the source (including associated air pollution control equipment) during a startup, shutdown, or malfunction event in a manner consistent with good air pollution control practices for minimizing emissions; or

(3) Does not provide adequate procedures for correcting malfunctioning process and/or air pollution control equipment as quickly as practicable.

(i) If the owner or operator demonstrates to the satisfaction of the Administrator that a startup, shutdown, or malfunction has occurred, then an observation occurring during such startup, shutdown, or malfunction shall not:

(1) Constitute a violation of relevant requirements of this subpart;

(2) Be used in any compliance determination under § 63.309; or

(3) Be considered for purposes of § 63.306, until the Administrator has resolved the claim that a startup, shutdown, or malfunction has occurred. If the Administrator determines that a startup, shutdown, or malfunction has not occurred, such observations may be used for purposes of § 63.306, regardless of whether the owner or operator further contests such determination. The owner's or operator's receipt of written notification from the Administrator that a startup, shutdown, or malfunction

has not occurred will serve, where applicable under § 63.306, as written notification from the certified observer that an exceedance has occurred.

**§ 63.311 Reporting and recordkeeping requirements.**

(a) After the effective date of an approved permit in a State under part 70 of this chapter, the owner or operator shall submit all notifications and reports required by this subpart to the State permitting authority. Use of information provided by the certified observer shall be a sufficient basis for notifications required under § 70.5(c)(9) of this chapter and the reasonable inquiry requirement of § 70.5(d) of this chapter.

(b) *Initial compliance certification.* The owner or operator of an existing or new coke oven battery shall provide a written statement(s) to certify compliance to the Administrator within 45 days of the applicable compliance date for the emission limitations or requirements in this subpart. The owner or operator shall include the following information in the initial compliance certification:

(1) Statement, signed by the owner or operator, certifying that a bypass/bleeder stack flare system or an approved alternative control device or system has been installed as required in § 63.307; and

(2) Statement, signed by the owner or operator, certifying that a written startup, shutdown, and malfunction plan has been prepared as required in § 63.310.

(c) *Notifications.* The owner or operator shall provide written notification(s) to the Administrator of:

(1) Intention to construct a new coke oven battery (including reconstruction of an existing coke oven battery and construction of a greenfield coke oven battery), a brownfield coke oven battery, or a padup rebuild coke oven battery, including the anticipated date of startup; and

(2) Election to meet emission limitation(s) in this subpart as follows:

(i) Notification of election to meet the emission limitations in § 63.304(b)(1) or § 63.304(c) either in lieu of or in addition to the applicable emission limitations in § 63.302(a) or § 63.303(a) must be received by the Administrator on or before November 15, 1993; or

(ii) Notification of election to meet the emission limitations in § 63.302(a)(1) or § 63.303(a), as applicable, must be received by the Administrator on or before December 31, 1995; and

(iii) Notification of election to meet the emission limitations in § 63.304(b)(2) through (4) and § 63.304(c) or election to meet residual risk standards to be developed according to section 112(f) of the Act in lieu of the emission standards in § 63.304 must be received on or before January 1, 1998.

(d) *Semiannual compliance certification.* The owner or operator of a coke oven battery shall include the following information in the semiannual compliance certification:

(1) Certification, signed by the owner or operator, that no coke oven gas was vented, except through the bypass/bleeder stack flare system of a by-product coke oven battery during the reporting period or that a venting report has been submitted according to the requirements in paragraph (e) of this section;

(2) Certification, signed by the owner or operator, that a startup, shutdown, or malfunction event did not occur for a coke oven battery during the reporting period or that a startup, shutdown, and malfunction event did occur and a report was submitted according to the requirements in § 63.310(e); and

(3) Certification, signed by the owner or operator, that work practices were implemented if applicable under § 63.306.

(e) *Report for the venting of coke oven gas other than through a flare system.* The owner or operator shall report any venting of coke oven gas through a bypass/bleeder stack that was not vented through the bypass/bleeder stack flare system to the Administrator as soon as practicable but no later than 24 hours after the beginning of the event. A written report shall be submitted within 30 days of the event and shall include a description of the event and, if applicable, a copy of the notification for a hazardous substance release required pursuant to § 302.6 of this chapter.

(f) *Recordkeeping.* The owner or operator shall maintain files of all required information in a permanent form suitable for inspection at an onsite loca-

tion for at least 1 year and must thereafter be accessible within 3 working days to the Administrator for the time period specified in § 70.6(a)(3)(ii)(B) of this chapter. Copies of the work practice plan developed under § 63.306 and the startup, shutdown, and malfunction plan developed under § 63.310 shall be kept onsite at all times. The owner or operator shall maintain the following information:

(1) For nonrecovery coke oven batteries,

(i) Records of daily pressure monitoring, if applicable according to § 63.303(a)(1)(ii) or § 63.303(b)(1)(ii);

(ii) Records demonstrating the performance of work practice requirements according to § 63.306(b)(7); and

(iii) Design characteristics of each emission control system for the capture and collection of charging emissions, as required by § 63.303(b)(2).

(2) For an approved alternative emission limitation according to § 63.305;

(i) Monitoring records for parameter(s) that indicate the exhaust flow rate is maintained;

(ii) If applicable under § 63.305(f)(4)(i);

(A) Records of opacity readings from the continuous opacity monitor for the control device for the shed; and

(B) Records that demonstrate the continuous opacity monitoring system meets the requirements of Performance Specification 1 in appendix B to part 60 of this chapter and the operation and maintenance requirements in part 52 of this chapter; and

(iii) Records of quarterly visual inspections as specified in § 63.305(f)(5), including the time and date a defect is detected and repaired.

(3) A copy of the work practice plan required by § 63.306 and any revision to the plan;

(4) If the owner or operator is required under § 63.306(c) to implement the provisions of a work practice plan for a particular emission point, the following records regarding the implementation of plan requirements for that emission point during the implementation period;

(i) Copies of all written and audiovisual materials used in the training, the dates of each class, the names of

the participants in each class, and documentation that all appropriate personnel have successfully completed the training required under § 63.306(b)(1);

(ii) The records required to be maintained by the plan provisions implementing § 63.306(b)(7);

(iii) Records resulting from audits of the effectiveness of the work practice program for the particular emission point, as required under § 63.306(b)(2)(i), 63.306(b)(3)(i), 63.306(b)(4)(i), or 63.306(b)(5)(i); and

(iv) If the plan provisions for coke oven doors must be implemented, records of the inventory of doors and jambs as required under § 63.306(b)(2)(vi); and

(5) The design drawings and engineering specifications for the bypass/bleeder stack flare system or approved alternative control device or system as required under § 63.307.

(6) Records specified in § 63.310(f) regarding the basis of each malfunction notification.

(g) Records required to be maintained and reports required to be filed with the Administrator under this subpart shall be made available in accordance with the requirements of this paragraph by the owner or operator to the authorized collective bargaining representative of the employees at a coke oven battery, for inspection and copying.

(1) Requests under paragraph (g) of this section shall be submitted in writing, and shall identify the records or reports that are subject to the request with reasonable specificity;

(2) The owner or operator shall produce the reports for inspection and copying within a reasonable period of time, not to exceed 30 days. A reasonable fee may be charged for copying (except for the first copy of any document), which shall not exceed the copying fee charged by the Administrator under part 2 of this chapter;

(3) Nothing in paragraph (g) of this section shall require the production for inspection or copying of any portion of a document that contains trade secrets or confidential business information that the Administrator would be prohibited from disclosing to the public under part 2 of this chapter; and

(4) The inspection or copying of a document under paragraph (g) of this section shall not in any way affect any property right of the owner or operator in such document under laws for the protection of intellectual property, including the copyright laws.

**§ 63.312 Existing regulations and requirements.**

(a) The owner or operator shall comply with all applicable State implementation plan emission limits and (subject to any expiration date) all federally enforceable emission limitations which are contained in an order, decree, permit, or settlement agreement for the control of emissions from offtake systems, topside port lids, coke oven doors, and charging operations in effect on September 15, 1992, or which have been modified according to the provisions of paragraph (c) of this section.

(b) Nothing in this subpart shall affect the enforcement of such State implementation plan emission limitations (or, subject to any expiration date, such federally enforceable emission limitations contained in an order, decree, permit, or settlement agreement) in effect on September 15, 1992, or which have been modified according to the provisions in paragraph (c) of this section.

(c) No such State implementation plan emission limitation (or, subject to any expiration date, such federally enforceable emission limitation contained in an order, decree, permit, or settlement agreement) in effect on September 15, 1992, may be modified under the Act unless:

(1) Such modification is consistent with all requirements of section 110 of the Act; and either

(i) Such modification ensures that the applicable emission limitations and format (e.g., single pass v. multiday average) in effect on September 15, 1992, will continue in effect; or

(ii) Such modification includes a change in the method of monitoring (except frequency unless frequency was indicated in the State implementation plan, or subject to any expiration date, other federally enforceable requirements contained in an order, decree, permit, or settlement agreement) that

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is more stringent than the method of monitoring in effect on September 15, 1992, and that ensures coke oven emission reductions greater than the emission reductions required on September 15, 1992. The burden of proof in demonstrating the stringency of the methods of monitoring is borne by the party requesting the modification and must be made to the satisfaction of the Administrator; or

(iii) Such modification makes the emission limitations more stringent while holding the format unchanged, makes the format more stringent while holding the emission limitations unchanged, or makes both more stringent.

(2) Any industry application to make a State implementation plan revision or other adjustment to account for differences between Method 303 in appendix A to this part and the State's method based on paragraph (c)(1)(ii) of this section shall be submitted within 12 months after October 27, 1993.

(d) Except as specified in §63.307(f), nothing in this subpart shall limit or affect any authority or obligation of Federal, State, or local agencies to establish emission limitations or other requirements more stringent than those specified in this subpart.

(e) Except as provided in §63.302(c), section 112(g) of the Act shall not apply to sources subject to this subpart.

**§63.313 Delegation of authority.**

(a) In delegating implementation and enforcement authority to a State under section 112(d) of the Act, the authorities contained in paragraph (c) of this section shall be retained by the Administrator and not transferred to a State.

(b) Whenever the Administrator learns that a delegated agency has not fully carried out the inspections and performance tests required under §63.309 for each applicable emission point of each battery each day, the Administrator shall immediately notify the agency. Unless the delegated agency demonstrates to the Administrator's satisfaction within 15 days of notification that the agency is consistently carrying out the inspections and performance tests required under §63.309 in the manner specified in the

preceding sentence, the Administrator shall notify the coke oven battery owner or operator that inspections and performance tests shall be carried out according to §63.309(a)(5). When the Administrator determines that the delegated agency is prepared to consistently perform all required inspections and performance tests each day, the Administrator shall give the coke oven battery owner or operator at least 15 days notice that implementation will revert back to the previously delegated agency.

(c) Authorities which will not be delegated to States:

- (1) §63.302(d);
- (2) §63.304(b)(6);
- (3) §§63.305 (b), (d) and (e);
- (4) §63.307(d); and
- (5) Section 2 of Method 303 in appendix A to this part.

(d) The authority to enforce this subpart is delegated to the States of: [Reserved]

APPENDIX A TO SUBPART L—OPERATING COKE OVEN BATTERIES AS OF APRIL 1, 1992

| No. | Plant                             | Battery                 |
|-----|-----------------------------------|-------------------------|
| 1   | ABC Coke, Tarrant, AL             | A<br>5<br>6             |
| 2   | Acme Steel, Chicago, IL           | 1<br>2                  |
| 3   | Armco, Inc., Middletown, OH       | 1<br>2<br>3             |
| 4   | Armco, Inc., Ashland, KY          | 3<br>4                  |
| 5   | Bethlehem Steel, Bethlehem, PA    | A<br>2<br>3             |
| 6   | Bethlehem Steel, Burns Harbor, IN | 1<br>2                  |
| 7   | Bethlehem Steel, Lackawanna, NY   | 7<br>8                  |
| 8   | Citizens Gas, Indianapolis, IN    | E<br>H<br>1             |
| 9   | Empire Coke, Holt, AL             | 1<br>2                  |
| 10  | Erie Coke, Erie, PA               | A<br>B                  |
| 11  | Geneva Steel, Provo, UT           | 1<br>2<br>3<br>4        |
| 12  | Gulf States Steel, Gadsden, AL    | 2<br>3<br>6             |
| 13  | Inland Steel, East Chicago, IN    | 6<br>7<br>9<br>10<br>11 |
| 14  | Jewell Coal and Coke, Vansant, VA | 2<br>3A<br>3B           |

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APPENDIX A TO SUBPART L—OPERATING COKE OVEN BATTERIES AS OF APRIL 1, 1992—Continued

| No.    | Plant                                     | Battery   |
|--------|---|---|
| 15 ... | Koppers, Woodward, AL .....               | 3C<br>1<br>2A<br>2B<br>4A<br>4B<br>5<br>6                     |
| 16 ... | LTV Steel, Cleveland, OH .....            | 7   |
| 17 ... | LTV Steel, Pittsburgh, PA .....           | P1<br>P2<br>P3N<br>P3S<br>P4                                  |
| 18 ... | LTV Steel, Chicago, IL .....              | 2   |
| 19 ... | LTV Steel, Warren, OH .....               | 4   |
| 20 ... | National Steel, Ecorse, MI .....          | 5   |
| 21 ... | National Steel, Granite City, IL .....    | A<br>B  |
| 22 ... | New Boston Coke, Portsmouth, OH .....     | 1   |
| 23 ... | Sharon Steel, Monessen, PA .....          | 1B<br>2   |
| 24 ... | Shenango, Pittsburgh, PA .....            | 1<br>4  |
| 25 ... | Sloss Industries, Birmingham, AL .....    | 3<br>4<br>5<br>C  |
| 26 ... | Toledo Coke, Toledo, OH .....             | C   |
| 27 ... | Tonawanda Coke, Buffalo, NY .....         | 1   |
| 28 ... | USX, Clairton, PA .....                   | 1<br>2<br>3<br>7<br>8<br>9<br>13<br>14<br>15<br>19<br>20<br>B |
| 29 ... | USX, Gary, IN .....                       | 2<br>3<br>5<br>7  |
| 30 ... | Wheeling-Pittsburgh, E. Steubenville, WV. | 1<br>2<br>3<br>8  |

[58 FR 57911, Oct. 27, 1993; 59 FR 1992, Jan. 13, 1994]

**Subpart M—National Perchloroethylene Air Emission Standards for Dry Cleaning Facilities**

SOURCE: 58 FR 49376, Sept. 22, 1993, unless otherwise noted.

**§ 63.320 Applicability.**

(a) The provisions of this subpart apply to the owner or operator of each

dry cleaning facility that uses perchloroethylene.

(b) Each dry cleaning system that commences construction or reconstruction on or after December 9, 1991, shall be in compliance with the provisions of this subpart beginning on September 22, 1993 or immediately upon startup, whichever is later, except for dry cleaning systems complying with section 112(i)(2) of the Clean Air Act.

(c) Each dry cleaning system that commenced construction or reconstruction before December 9, 1991, shall comply with §§ 63.322 (c), (d), (i), (j), (k), (l), and (m), 63.323(d), and 63.324(a), (b), (d)(1), (d)(2), (d)(3), (d)(4), and (e) beginning on December 20, 1993, and shall comply with other provisions of this subpart by September 23, 1996.

(d) Each existing dry-to-dry machine and its ancillary equipment located in a dry cleaning facility that includes only dry-to-dry machines and each existing transfer machine system and its ancillary equipment, as well as each existing dry-to-dry machine and its ancillary equipment, located in a dry cleaning facility that includes both transfer machine system(s) and dry-to-dry machine(s) is exempt from §§ 63.322, 63.323, and 63.324, except §§ 63.322(c), (d), (i), (j), (k), (l), and (m), 63.323(d), and 63.324(a), (b), (d)(1), (d)(2), (d)(3), (d)(4), and (e) if the total perchloroethylene consumption of the dry cleaning facility is less than 530 liters (140 gallons) per year. Consumption is determined according to § 63.323(d).

(e) Each existing transfer machine system and its ancillary equipment located in a dry cleaning facility that includes only transfer machine system(s) is exempt from §§ 63.322, 63.323, and 63.324, except §§ 63.322(c), (d), (i), (j), (k), (l), and (m), 63.323(d), and 63.324(a), (b), (d)(1), (d)(2), (d)(3), (d)(4), and (e) if the perchloroethylene consumption of the dry cleaning facility is less than 760 liters (200 gallons) per year. Consumption is determined according to § 63.323(d).

(f) If the total yearly perchloroethylene consumption of a dry cleaning facility determined according to § 63.323(d) is initially less than the amounts specified in paragraph (d) or (e) of this section, but

later exceeds those amounts, the existing dry cleaning system(s) in the dry cleaning facility must comply with §§ 63.322, 63.323, and 63.324 by 180 calendar days from the date that the facility determines it has exceeded the amounts specified, or by September 23, 1996, whichever is later.

(g) A dry cleaning facility is a major source if the facility emits or has the potential to emit more than 9.1 megagrams per year (10 tons per year) of perchloroethylene to the atmosphere. In lieu of measuring a facility's potential to emit perchloroethylene emissions or determining a facility's potential to emit perchloroethylene emissions, a dry cleaning facility is a major source if:

(1) It includes only dry-to-dry machine(s) and has a total yearly perchloroethylene consumption greater than 8,000 liters (2,100 gallons) as determined according to § 63.323(d); or

(2) It includes only transfer machine system(s) or both dry-to-dry machine(s) and transfer machine system(s) and has a total yearly perchloroethylene consumption greater than 6,800 liters (1,800 gallons) as determined according to § 63.323(d).

(h) A dry cleaning facility is an area source if it does not meet the conditions of paragraph (g) of this section.

(i) If the total yearly perchloroethylene consumption of a dry cleaning facility determined according to § 63.323(d) is initially less than the amounts specified in paragraph (g) of this section, but then exceeds those amounts, the dry cleaning facility becomes a major source and all dry cleaning systems located at that dry cleaning facility must comply with the appropriate requirements for major sources under §§ 63.322, 63.323, and 63.324 by 180 calendar days from the date that the facility determines it has exceeded the amount specified, or by September 23, 1996, whichever is later.

(j) All coin-operated dry cleaning machines are exempt from the requirements of this subpart.

(k) The owner or operator of any source subject to the provisions of this subpart M is subject to title V permitting requirements. These affected sources, if not major or located at major sources as defined under 40 CFR

70.2, may be deferred by the applicable title V permitting authority from title V permitting requirements for 5 years after the date on which the EPA first approves a part 70 program (i.e., until December 9, 1999). All sources receiving deferrals shall submit title V permit applications within 12 months of such date (by December 9, 2000). All sources receiving deferrals still must meet compliance schedule as stated in this § 63.320.

[58 FR 49376, Sept. 22, 1993, as amended at 58 FR 66289, Dec. 20, 1993; 61 FR 27788, June 3, 1996]

#### § 63.321 Definitions.

*Administrator* means the Administrator of the United States Environmental Protection Agency or his or her authorized representative (e.g., a State that has been delegated the authority to implement the provisions of this part).

*Ancillary equipment* means the equipment used with a dry cleaning machine in a dry cleaning system including, but not limited to, emission control devices, pumps, filters, muck cookers, stills, solvent tanks, solvent containers, water separators, exhaust dampers, diverter valves, interconnecting piping, hoses, and ducts.

*Area source* means any perchloroethylene dry cleaning facility that meets the conditions of § 63.320(h).

*Articles* mean clothing, garments, textiles, fabrics, leather goods, and the like, that are dry cleaned.

*Biweekly* means any 14-day period of time.

*Carbon adsorber* means a bed of activated carbon into which an air-perchloroethylene gas-vapor stream is routed and which adsorbs the perchloroethylene on the carbon.

*Coin-operated dry cleaning machine* means a dry cleaning machine that is operated by the customer (that is, the customer places articles into the machine, turns the machine on, and removes articles from the machine).

*Colorimetric detector tube* means a glass tube (sealed prior to use), containing material impregnated with a chemical that is sensitive to perchloroethylene and is designed to measure the concentration of perchloroethylene in air.

*Construction*, for purposes of this subpart, means the fabrication (onsite), erection, or installation of a dry cleaning system subject to this subpart.

*Desorption* means regeneration of a carbon adsorber by removal of the perchloroethylene adsorbed on the carbon.

*Diverter valve* means a flow control device that prevents room air from passing through a refrigerated condenser when the door of the dry cleaning machine is open.

*Dry cleaning* means the process of cleaning articles using perchloroethylene.

*Dry cleaning cycle* means the washing and drying of articles in a dry-to-dry machine or transfer machine system.

*Dry cleaning facility* means an establishment with one or more dry cleaning systems.

*Dry cleaning machine* means a dry-to-dry machine or each machine of a transfer machine system.

*Dry cleaning machine drum* means the perforated container inside the dry cleaning machine that holds the articles during dry cleaning.

*Dry-to-dry machine* means a dry-to-dry machine and its ancillary equipment or a transfer machine system and its ancillary equipment.

*Dryer* means a machine used to remove perchloroethylene from articles by tumbling them in a heated air stream (see reclaimer).

*Dry-to-dry machine* means a one-machine dry cleaning operation in which washing and drying are performed in the same machine.

*Exhaust damper* means a flow control device that prevents the air-perchloroethylene gas-vapor stream from exiting the dry cleaning machine into a carbon adsorber before room air is drawn into the dry cleaning machine.

*Existing* means commenced construction or reconstruction before December 9, 1991.

*Filter* means a porous device through which perchloroethylene is passed to remove contaminants in suspension. Examples include, but are not limited to, lint filter (button trap), cartridge filter, tubular filter, regenerative filter, prefilter, polishing filter, and spin disc filter.

*Heating coil* means the device used to heat the air stream circulated from the dry cleaning machine drum, after perchloroethylene has been condensed from the air stream and before the stream reenters the dry cleaning machine drum.

*Major source* means any dry cleaning facility that meets the conditions of § 63.320(g).

*Muck cooker* means a device for heating perchloroethylene-laden waste material to volatilize and recover perchloroethylene.

*New* means commenced construction or reconstruction on or after December 9, 1991.

*Perceptible leaks* mean any perchloroethylene vapor or liquid leaks that are obvious from:

- (1) The odor of perchloroethylene;
- (2) Visual observation, such as pools or droplets of liquid; or
- (3) The detection of gas flow by passing the fingers over the surface of equipment.

*Perchloroethylene consumption* means the total volume of perchloroethylene purchased based upon purchase receipts or other reliable measures.

*Reclaimer* means a machine used to remove perchloroethylene from articles by tumbling them in a heated air stream (see dryer).

*Reconstruction*, for purposes of this subpart, means replacement of a washer, dryer, or reclaimer; or replacement of any components of a dry cleaning system to such an extent that the fixed capital cost of the new components exceeds 50 percent of the fixed capital cost that would be required to construct a comparable new source.

*Refrigerated condenser* means a vapor recovery system into which an air-perchloroethylene gas-vapor stream is routed and the perchloroethylene is condensed by cooling the gas-vapor stream.

*Refrigerated condenser coil* means the coil containing the chilled liquid used to cool and condense the perchloroethylene.

*Responsible official* means one of the following:

- (1) For a corporation: A president, secretary, treasurer, or vice president of the corporation in charge of a principal business function, or any other

person who performs similar policy or decision-making functions for the corporation, or a duly authorized representative of such person if the representative is responsible for the overall operation of one or more dry cleaning facilities;

(2) For a partnership: A general partner;

(3) For a sole proprietorship: The owner; or

(4) For a municipality, State, Federal, or other public agency: Either a principal executive officer or ranking official.

*Room enclosure* means a stationary structure that encloses a transfer machine system, and is vented to a carbon adsorber or an equivalent control device during operation of the transfer machine system.

*Source*, for purposes of this subpart, means each dry cleaning system.

*Still* means any device used to volatilize and recover perchloroethylene from contaminated perchloroethylene.

*Temperature sensor* means a thermometer or thermocouple used to measure temperature.

*Transfer machine system* means a multiple-machine dry cleaning operation in which washing and drying are performed in different machines. Examples include, but are not limited to:

(1) A washer and dryer(s);

(2) A washer and reclaimer(s); or

(3) A dry-to-dry machine and reclaimer(s).

*Washer* means a machine used to clean articles by immersing them in perchloroethylene. This includes a dry-to-dry machine when used with a reclaimer.

*Water separator* means any device used to recover perchloroethylene from a water-perchloroethylene mixture.

*Year* or *Yearly* means any consecutive 12-month period of time.

**§ 63.322 Standards.**

(a) The owner or operator of each existing dry cleaning system shall comply with either paragraph (a)(1) or (a)(2) of this section and shall comply with paragraph (a)(3) of this section if applicable.

(1) Route the air-perchloroethylene gas-vapor stream contained within each dry cleaning machine through a

refrigerated condenser or an equivalent control device.

(2) Route the air-perchloroethylene gas-vapor stream contained within each dry cleaning machine through a carbon adsorber installed on the dry cleaning machine prior to September 22, 1993.

(3) Contain the dry cleaning machine inside a room enclosure if the dry cleaning machine is a transfer machine system located at a major source. Each room enclosure shall be:

(i) Constructed of materials impermeable to perchloroethylene; and

(ii) Designed and operated to maintain a negative pressure at each opening at all times that the machine is operating.

(b) The owner or operator of each new dry cleaning system:

(1) Shall route the air-perchloroethylene gas-vapor stream contained within each dry cleaning machine through a refrigerated condenser or an equivalent control device;

(2) Shall eliminate any emission of perchloroethylene during the transfer of articles between the washer and dryer(s); and

(3) Shall pass the air-perchloroethylene gas-vapor stream from inside the dry cleaning machine drum through a carbon adsorber or equivalent control device immediately before or as the door of the dry cleaning machine is opened if the dry cleaning machine is located at a major source.

(c) The owner or operator shall close the door of each dry cleaning machine immediately after transferring articles to or from the machine, and shall keep the door closed at all other times.

(d) The owner or operator of each dry cleaning system shall operate and maintain the system according to the manufacturers' specifications and recommendations.

(e) Each refrigerated condenser used for the purposes of complying with paragraph (a) or (b) of this section and installed on a dry-to-dry machine, dryer, or reclaimer:

(1) Shall be operated to not vent or release the air-perchloroethylene gas-vapor stream contained within the dry cleaning machine to the atmosphere

while the dry cleaning machine drum is rotating;

(2) Shall be monitored according to § 63.323(a)(1); and

(3) Shall be operated with a diverter valve, which prevents air drawn into the dry cleaning machine when the door of the machine is open from passing through the refrigerated condenser.

(f) Each refrigerated condenser used for the purpose of complying with paragraph (a) of this section and installed on a washer:

(1) Shall be operated to not vent the air-perchloroethylene gas-vapor contained within the washer to the atmosphere until the washer door is opened;

(2) Shall be monitored according to § 63.323(a)(2); and

(3) Shall not use the same refrigerated condenser coil for the washer that is used by a dry-to-dry machine, dryer, or reclaimer.

(g) Each carbon adsorber used for the purposes of complying with paragraph (a) or (b) of this section:

(1) Shall not be bypassed to vent or release any air-perchloroethylene gas-vapor stream to the atmosphere at any time; and

(2) Shall be monitored according to the applicable requirements in § 63.323(b) or (c).

(h) Each room enclosure used for the purposes of complying with paragraph (a)(3) of this section:

(1) Shall be operated to vent all air from the room enclosure through a carbon adsorber or an equivalent control device; and

(2) Shall be equipped with a carbon adsorber that is not the same carbon adsorber used to comply with paragraph (a)(2) or (b)(3) of this section.

(i) The owner or operator of an affected facility shall drain all cartridge filters in their housing, or other sealed container, for a minimum of 24 hours, or shall treat such filters in an equivalent manner, before removal from the dry cleaning facility.

(j) The owner or operator of an affected facility shall store all perchloroethylene and wastes that contain perchloroethylene in solvent tanks or solvent containers with no perceptible leaks.

(k) The owner or operator of a dry cleaning system shall inspect the fol-

lowing components weekly for perceptible leaks while the dry cleaning system is operating:

(1) Hose and pipe connections, fittings, couplings, and valves;

(2) Door gaskets and seatings;

(3) Filter gaskets and seatings;

(4) Pumps;

(5) Solvent tanks and containers;

(6) Water separators;

(7) Muck cookers;

(8) Stills;

(9) Exhaust dampers;

(10) Diverter valves; and

(11) Cartridge filter housings.

(l) The owner or operator of a dry cleaning facility with a total facility consumption below the applicable consumption levels of § 63.320(d) or (e) shall inspect the components listed in paragraph (k) of this section biweekly for perceptible leaks while the dry cleaning system is operating.

(m) The owner or operator of a dry cleaning system shall repair all perceptible leaks detected under paragraph (k) of this section within 24 hours. If repair parts must be ordered, either a written or verbal order for those parts shall be initiated within 2 working days of detecting such a leak. Such repair parts shall be installed within 5 working days after receipt.

(n) If parameter values monitored under paragraphs (e), (f), or (g) of this section do not meet the values specified in § 63.323(a), (b), or (c), adjustments or repairs shall be made to the dry cleaning system or control device to meet those values. If repair parts must be ordered, either a written or verbal order for such parts shall be initiated within 2 working days of detecting such a parameter value. Such repair parts shall be installed within 5 working days after receipt.

#### **§ 63.323 Test methods and monitoring.**

(a) When a refrigerated condenser is used to comply with § 63.322(a)(1) or (b)(1):

(1) The owner or operator shall measure the temperature of the air-perchloroethylene gas-vapor stream on the outlet side of the refrigerated condenser on a dry-to-dry machine, dryer, or reclaimer weekly with a temperature sensor to determine if it is equal

to or less than 7.2 °C (45 °F). The temperature sensor shall be used according to the manufacturer's instructions and shall be designed to measure a temperature of 7.2 °C (45 °F) to an accuracy of  $\pm 1.1$  °C ( $\pm 2$  °F).

(2) The owner or operator shall calculate the difference between the temperature of the air-perchloroethylene gas-vapor stream entering the refrigerated condenser on a washer and the temperature of the air-perchloroethylene gas-vapor stream exiting the refrigerated condenser on the washer weekly to determine that the difference is greater than or equal to 11.1 °C (20 °F).

(i) Measurements of the inlet and outlet streams shall be made with a temperature sensor. Each temperature sensor shall be used according to the manufacturer's instructions, and designed to measure at least a temperature range from 0 °C (32 °F) to 48.9 °C (120 °F) to an accuracy of  $\pm 1.1$  °C ( $\pm 2$  °F).

(ii) The difference between the inlet and outlet temperatures shall be calculated weekly from the measured values.

(b) When a carbon adsorber is used to comply with § 63.322(a)(2) or exhaust is passed through a carbon adsorber immediately upon machine door opening to comply with § 63.322(b)(3), the owner or operator shall measure the concentration of perchloroethylene in the exhaust of the carbon adsorber weekly with a colorimetric detector tube, while the dry cleaning machine is venting to that carbon adsorber at the end of the last dry cleaning cycle prior to desorption of that carbon adsorber to determine that the perchloroethylene concentration in the exhaust is equal to or less than 100 parts per million by volume. The owner or operator shall:

(1) Use a colorimetric detector tube designed to measure a concentration of 100 parts per million by volume of perchloroethylene in air to an accuracy of  $\pm 25$  parts per million by volume; and

(2) Use the colorimetric detector tube according to the manufacturer's instructions; and

(3) Provide a sampling port for monitoring within the exhaust outlet of the carbon adsorber that is easily accessible and located at least 8 stack or

duct diameters downstream from any flow disturbance such as a bend, expansion, contraction, or outlet; downstream from no other inlet; and 2 stack or duct diameters upstream from any flow disturbance such as a bend, expansion, contraction, inlet, or outlet.

(c) If the air-perchloroethylene gas-vapor stream is passed through a carbon adsorber prior to machine door opening to comply with § 63.322(b)(3), the owner or operator of an affected facility shall measure the concentration of perchloroethylene in the dry cleaning machine drum at the end of the dry cleaning cycle weekly with a colorimetric detector tube to determine that the perchloroethylene concentration is equal to or less than 300 parts per million by volume. The owner or operator shall:

(1) Use a colorimetric detector tube designed to measure a concentration of 300 parts per million by volume of perchloroethylene in air to an accuracy of  $\pm 75$  parts per million by volume; and

(2) Use the colorimetric detector tube according to the manufacturer's instructions; and

(3) Conduct the weekly monitoring by inserting the colorimetric detector tube into the open space above the articles at the rear of the dry cleaning machine drum immediately upon opening the dry cleaning machine door.

(d) When calculating yearly perchloroethylene consumption for the purpose of demonstrating applicability according to § 63.320, the owner or operator shall perform the following calculation on the first day of every month:

(1) Sum the volume of all perchloroethylene purchases made in each of the previous 12 months, as recorded in the log described in § 63.324(d)(1).

(2) If no perchloroethylene purchases were made in a given month, then the perchloroethylene consumption for that month is zero gallons.

(3) The total sum calculated in paragraph (d) of this section is the yearly perchloroethylene consumption at the facility.

**§ 63.324 Reporting and recordkeeping requirements.**

(a) Each owner or operator of a dry cleaning facility shall notify the Administrator or delegated State authority in writing within 270 calendar days after September 23, 1993 (i.e., June 18, 1994) and provide the following information:

(1) The name and address of the owner or operator;

(2) The address (that is, physical location) of the dry cleaning facility;

(3) A brief description of the type of each dry cleaning machine at the dry cleaning facility;

(4) Documentation as described in § 63.323(d) of the yearly perchloroethylene consumption at the dry cleaning facility for the previous year to demonstrate applicability according to § 63.320; or an estimation of perchloroethylene consumption for the previous year to estimate applicability with § 63.320; and

(5) A description of the type of control device(s) that will be used to achieve compliance with § 63.322 (a) or (b) and whether the control device(s) is currently in use or will be purchased.

(6) Documentation to demonstrate to the Administrator's satisfaction that each room enclosure used to meet the requirements of § 63.322(a)(3) meets the requirements of § 63.322(a)(3) (i) and (ii).

(b) Each owner or operator of a dry cleaning facility shall submit to the Administrator or delegated State authority by registered mail on or before the 30th day following the compliance dates specified in § 63.320 (b) or (c) or June 18, 1994, whichever is later, a notification of compliance status providing the following information and signed by a responsible official who shall certify its accuracy:

(1) The yearly perchloroethylene solvent consumption limit based upon the yearly solvent consumption calculated according to § 63.323(d);

(2) Whether or not they are in compliance with each applicable requirement of § 63.322; and

(3) All information contained in the statement is accurate and true.

(c) Each owner or operator of an area source dry cleaning facility that exceeds the solvent consumption limit reported in paragraph (b) of this sec-

tion shall submit to the Administrator or a delegated State authority by registered mail on or before the dates specified in § 63.320 (f) or (i), a notification of compliance status providing the following information and signed by a responsible official who shall certify its accuracy:

(1) The new yearly perchloroethylene solvent consumption limit based upon the yearly solvent consumption calculated according to § 63.323(d);

(2) Whether or not they are in compliance with each applicable requirement of § 63.322; and

(3) All information contained in the statement is accurate and true.

(d) Each owner or operator of a dry cleaning facility shall keep receipts of perchloroethylene purchases and a log of the following information and maintain such information on site and show it upon request for a period of 5 years:

(1) The volume of perchloroethylene purchased each month by the dry cleaning facility as recorded from perchloroethylene purchases; if no perchloroethylene is purchased during a given month then the owner or operator would enter zero gallons into the log;

(2) The calculation and result of the yearly perchloroethylene consumption determined on the first day of each month as specified in § 63.323(d);

(3) The dates when the dry cleaning system components are inspected for perceptible leaks, as specified in § 63.322(k) or (l), and the name or location of dry cleaning system components where perceptible leaks are detected;

(4) The dates of repair and records of written or verbal orders for repair parts to demonstrate compliance with § 63.322(m) and (n);

(5) The date and temperature sensor monitoring results, as specified in § 63.323 if a refrigerated condenser is used to comply with § 63.322(a) or (b); and

(6) The date and colorimetric detector tube monitoring results, as specified in § 63.323, if a carbon adsorber is used to comply with § 63.322(a)(2) or (b)(3).

(e) Each owner or operator of a dry cleaning facility shall retain onsite a copy of the design specifications and

the operating manuals for each dry cleaning system and each emission control device located at the dry cleaning facility.

[58 FR 49376, Sept. 22, 1993, as amended at 58 FR 66289, Dec. 20, 1993]

**§ 63.325 Determination of equivalent emission control technology.**

(a) Any person requesting that the use of certain equipment or procedures be considered equivalent to the requirements under § 63.322 shall collect, verify, and submit to the Administrator the following information to show that the alternative achieves equivalent emission reductions:

(1) Diagrams, as appropriate, illustrating the emission control technology, its operation and integration into or function with dry-to-dry machine(s) or transfer machine system(s) and their ancillary equipment during each portion of the normal dry cleaning cycle;

(2) Information quantifying vented perchloroethylene emissions from the dry-to-dry machine(s) or transfer machine system(s) during each portion of the dry cleaning cycle with and without the use of the candidate emission control technology;

(3) Information on solvent mileage achieved with and without the candidate emission control technology. Solvent mileage is the average weight of articles cleaned per volume of perchloroethylene used. Solvent mileage data must be of continuous duration for at least 1 year under the conditions of a typical dry cleaning operation. This information on solvent mileage must be accompanied by information on the design, configuration, operation, and maintenance of the specific dry cleaning system from which the solvent mileage information was obtained;

(4) Identification of maintenance requirements and parameters to monitor to ensure proper operation and maintenance of the candidate emission control technology;

(5) Explanation of why this information is considered accurate and representative of both the short-term and the long-term performance of the candidate emission control technology on

the specific dry cleaning system examined;

(6) Explanation of why this information can or cannot be extrapolated to dry cleaning systems other than the specific system(s) examined; and

(7) Information on the cross-media impacts (to water and solid waste) of the candidate emission control technology and demonstration that the cross-media impacts are less than or equal to the cross-media impacts of a refrigerated condenser.

(b) For the purpose of determining equivalency to control equipment required under § 63.322, the Administrator will evaluate the petition to determine whether equivalent control of perchloroethylene emissions has been adequately demonstrated.

(c) Where the Administrator determines that certain equipment and procedures may be equivalent, the Administrator will publish a notice in the FEDERAL REGISTER proposing to consider this equipment or these procedures as equivalent. After notice and opportunity for public hearing, the Administrator will publish the final determination of equivalency in the FEDERAL REGISTER.

**Subpart N—National Emission Standards for Chromium Emissions From Hard and Decorative Chromium Electroplating and Chromium Anodizing Tanks**

SOURCE: 60 FR 4963, Jan. 25, 1995, unless otherwise noted.

**§ 63.340 Applicability and designation of sources.**

(a) The affected source to which the provisions of this subpart apply is each chromium electroplating or chromium anodizing tank at facilities performing hard chromium electroplating, decorative chromium electroplating, or chromium anodizing.

(b) Owners or operators of affected sources subject to the provisions of this subpart must also comply with the requirements of subpart A of this part, according to the applicability of subpart A of this part to such sources, as identified in Table 1 of this subpart.

(c) Process tanks associated with a chromium electroplating or chromium anodizing process, but in which neither chromium electroplating nor chromium anodizing is taking place, are not subject to the provisions of this subpart. Examples of such tanks include, but are not limited to, rinse tanks, etching tanks, and cleaning tanks. Likewise, tanks that contain a chromium solution, but in which no electrolytic process occurs, are not subject to this subpart. An example of such a tank is a chrome conversion coating tank where no electrical current is applied.

(d) Affected sources in which research and laboratory operations are performed are exempt from the provisions of this subpart when such operations are taking place.

(e)(1) The Administrator has determined, pursuant to the criteria under section 502(a) of the Act, that an owner or operator of the following types of operations that are not by themselves major sources and that are not located at major sources, as defined under 40 CFR 70.2, is permanently exempt from title V permitting requirements for that operation:

(i) Any decorative chromium electroplating operation or chromium anodizing operation that uses fume suppressants as an emission reduction technology; and

(ii) Any decorative chromium electroplating operation that uses a trivalent chromium bath that incorporates a wetting agent as a bath ingredient.

(2) An owner or operator of any other affected source subject to the provisions of this subpart is subject to title V permitting requirements. These affected sources, if not major or located at major sources as defined under 40 CFR 70.2, may be deferred by the applicable title V permitting authority from title V permitting requirements for 5 years after the date on which the EPA first approves a part 70 program (i.e., until December 9, 1999). All sources receiving deferrals shall submit title V permit applications within 12 months of such date (by December 9, 2000). All sources receiving deferrals still must

meet the compliance schedule as stated in § 63.343.

[60 FR 4963, Jan. 25, 1995, as amended at 61 FR 27787, June 3, 1996]

#### § 63.341 Definitions and nomenclature.

(a) *Definitions.* Terms used in this subpart are defined in the Act, in subpart A of this part, or in this section. For the purposes of subpart N of this part, if the same term is defined in subpart A of this part and in this section, it shall have the meaning given in this section.

*Add-on air pollution control device* means equipment installed in the ventilation system of chromium electroplating and anodizing tanks for the purposes of collecting and containing chromium emissions from the tank(s).

*Air pollution control technique* means any method, such as an add-on air pollution control device or a chemical fume suppressant, that is used to reduce chromium emissions from chromium electroplating and chromium anodizing tanks.

*Base metal* means the metal or metal alloy that comprises the workpiece.

*Bath component* means the trade or brand name of each component(s) in trivalent chromium plating baths. For trivalent chromium baths, the bath composition is proprietary in most cases. Therefore, the trade or brand name for each component(s) can be used; however, the chemical name of the wetting agent contained in that component must be identified.

*Chemical fume suppressant* means any chemical agent that reduces or suppresses fumes or mists at the surface of an electroplating or anodizing bath; another term for fume suppressant is mist suppressant.

*Chromic acid* means the common name for chromium anhydride (CrO<sub>3</sub>).

*Chromium anodizing* means the electrolytic process by which an oxide layer is produced on the surface of a base metal for functional purposes (e.g., corrosion resistance or electrical insulation) using a chromic acid solution. In chromium anodizing, the part to be anodized acts as the anode in the electrical circuit, and the chromic acid solution, with a concentration typically ranging from 50 to 100 grams per liter (g/L), serves as the electrolyte.

*Chromium electroplating or chromium anodizing tank* means the receptacle or container in which hard or decorative chromium electroplating or chromium anodizing occurs.

*Composite mesh-pad system* means an add-on air pollution control device typically consisting of several mesh-pad stages. The purpose of the first stage is to remove large particles. Smaller particles are removed in the second stage, which consists of the composite mesh pad. A final stage may remove any reentrained particles not collected by the composite mesh pad.

*Decorative chromium electroplating* means the process by which a thin layer of chromium (typically 0.003 to 2.5 microns) is electrodeposited on a base metal, plastic, or undercoating to provide a bright surface with wear and tarnish resistance. In this process, the part(s) serves as the cathode in the electrolytic cell and the solution serves as the electrolyte. Typical current density applied during this process ranges from 540 to 2,400 Amperes per square meter (A/m<sup>2</sup>) for total plating times ranging between 0.5 to 5 minutes.

*Electroplating or anodizing bath* means the electrolytic solution used as the conducting medium in which the flow of current is accompanied by movement of metal ions for the purposes of electroplating metal out of the solution onto a workpiece or for oxidizing the base material.

*Emission limitation* means, for the purposes of this subpart, the concentration of total chromium allowed to be emitted expressed in milligrams per dry standard cubic meter (mg/dscm), or the allowable surface tension expressed in dynes per centimeter (dynes/cm).

*Facility* means the major or area source at which chromium electroplating or chromium anodizing is performed.

*Fiber-bed mist eliminator* means an add-on air pollution control device that removes contaminants from a gas stream through the mechanisms of inertial impaction and Brownian diffusion. These devices are typically installed downstream of another control device, which serves to prevent plugging, and consist of one or more fiber beds. Each bed consists of a hollow cylinder formed from two concentric

screens; the fiber between the screens may be fabricated from glass, ceramic plastic, or metal.

*Foam blanket* means the type of chemical fume suppressant that generates a layer of foam across the surface of a solution when current is applied to that solution.

*Fresh water* means water, such as tap water, that has not been previously used in a process operation or, if the water has been recycled from a process operation, it has been treated and meets the effluent guidelines for chromium wastewater.

*Hard chromium electroplating* or industrial chromium electroplating means a process by which a thick layer of chromium (typically 1.3 to 760 microns) is electrodeposited on a base material to provide a surface with functional properties such as wear resistance, a low coefficient of friction, hardness, and corrosion resistance. In this process, the part serves as the cathode in the electrolytic cell and the solution serves as the electrolyte. Hard chromium electroplating process is performed at current densities typically ranging from 1,600 to 6,500 A/m<sup>2</sup> for total plating times ranging from 20 minutes to 36 hours depending upon the desired plate thickness.

*Hexavalent chromium* means the form of chromium in a valence state of +6.

*Large, hard chromium electroplating facility* means a facility that performs hard chromium electroplating and has a maximum cumulative potential rectifier capacity greater than or equal to 60 million ampere-hours per year (amp-hr/yr).

*Maximum cumulative potential rectifier capacity* means the summation of the total installed rectifier capacity associated with the hard chromium electroplating tanks at a facility, expressed in amperes, multiplied by the maximum potential operating schedule of 8,400 hours per year and 0.7, which assumes that electrodes are energized 70 percent of the total operating time. The maximum potential operating schedule is based on operating 24 hours per day, 7 days per week, 50 weeks per year.

*Operating parameter value* means a minimum or maximum value established for a control device or process parameter which, if achieved by itself

or in combination with one or more other operating parameter values, determines that an owner or operator is in continual compliance with the applicable emission limitation or standard.

*Packed-bed scrubber* means an add-on air pollution control device consisting of a single or double packed bed that contains packing media on which the chromic acid droplets impinge. The packed-bed section of the scrubber is followed by a mist eliminator to remove any water entrained from the packed-bed section.

*Research or laboratory operation* means an operation whose primary purpose is for research and development of new processes and products, that is conducted under the close supervision of technically trained personnel, and that is not involved in the manufacture of products for commercial sale in commerce, except in a de minimis manner.

*Small, hard chromium electroplating facility* means a facility that performs hard chromium electroplating and has a maximum cumulative potential rectifier capacity less than 60 million amp-hr/yr.

*Stalagmometer* means a device used to measure the surface tension of a solution.

*Surface tension* means the property, due to molecular forces, that exists in the surface film of all liquids and tends to prevent liquid from spreading.

*Tank operation* means the time in which current and/or voltage is being applied to a chromium electroplating tank or a chromium anodizing tank.

*Tensiometer* means a device used to measure the surface tension of a solution.

*Trivalent chromium* means the form of chromium in a valence state of +3.

*Trivalent chromium process* means the process used for electrodeposition of a thin layer of chromium onto a base material using a trivalent chromium solution instead of a chromic acid solution.

*Wetting agent* means the type of chemical fume suppressant that reduces the surface tension of a liquid.

(b) *Nomenclature.* The nomenclature used in this subpart has the following meaning:

(1) AMR=the allowable mass emission rate from each type of affected source

subject to the same emission limitation in milligrams per hour (mg/hr).

(2)  $AMR_{sys}$ =the allowable mass emission rate from affected sources controlled by an add-on air pollution control device controlling emissions from multiple sources in mg/hr.

(3) EL=the applicable emission limitation from §63.342 in milligrams per dry standard cubic meter (mg/dscm).

(4)  $IA_{total}$ =the sum of all inlet duct areas from both affected and non-affected sources in meters squared.

(5)  $IDA_i$ =the total inlet area for all ducts associated with affected sources in meters squared.

(6)  $IDA_{i,a}$ =the total inlet duct area for all ducts conveying chromic acid from each type of affected source performing the same operation, or each type of affected source subject to the same emission limitation in meters squared.

(7) VR=the total of ventilation rates for each type of affected source subject to the same emission limitation in dry standard cubic meters per minute (dscm/min).

(8)  $VR_{inlet}$ =the total ventilation rate from all inlet ducts associated with affected sources in dscm/min.

(9)  $VR_{inlet,a}$ =the total ventilation rate from all inlet ducts conveying chromic acid from each type of affected source performing the same operation, or each type of affected source subject to the same emission limitation in dscm/min.

(10)  $VR_{tot}$ =the average total ventilation rate for the three test runs as determined at the outlet by means of the Method 306 in appendix A of this part testing in dscm/min.

#### §63.342 Standards.

(a) Each owner or operator of an affected source subject to the provisions of this subpart shall comply with these requirements on and after the compliance dates specified in §63.343(a). All affected sources are regulated by applying maximum achievable control technology.

(b) *Applicability of emission limits.* (1) The emission limitations in this section apply only during tank operation, and also apply during periods of start-up and shutdown as these are routine occurrences for affected sources subject to this subpart. The emission limitations do not apply during periods of

malfunction, but the work practice standards that address operation and maintenance and that are required by paragraph (f) of this section must be followed during malfunctions.

(2) If an owner or operator is controlling a group of tanks with a common add-on air pollution control device, the emission limitations of paragraphs (c), (d), and (e) of this section apply whenever any one affected source is operated. The emission limitation that applies to the group of affected sources is:

(i) The emission limitation identified in paragraphs (c), (d), and (e) of this section if the affected sources are performing the same type of operation (e.g., hard chromium electroplating), are subject to the same emission limitation, and are not controlled by an add-on air pollution control device also controlling nonaffected sources;

(ii) The emission limitation calculated according to § 63.344(e)(3) if affected sources are performing the same type of operation, are subject to the same emission limitation, and are controlled with an add-on air pollution control device that is also controlling nonaffected sources; and

(iii) The emission limitation calculated according to § 63.344(e)(4) if affected sources are performing different types of operations, or affected sources are performing the same operations but subject to different emission limitations, and are controlled with an add-on air pollution control device that may also be controlling emissions from nonaffected sources.

(c)(1) *Standards for hard chromium electroplating tanks.* During tank operation, each owner or operator of an existing, new, or reconstructed affected source shall control chromium emissions discharged to the atmosphere from that affected source by not allowing the concentration of total chromium in the exhaust gas stream discharged to the atmosphere to exceed:

(i) 0.015 milligrams of total chromium per dry standard cubic meter (mg/dscm) of ventilation air ( $6.6 \times 10^{-6}$  grains per dry standard cubic foot [gr/dscf]); or

(ii) 0.03 mg/dscm ( $1.3 \times 10^{-5}$  gr/dscf) if the hard chromium electroplating tank is an existing affected source and is lo-

cated at a small, hard chromium electroplating facility.

(2)(i) An owner or operator may demonstrate the size of a hard chromium electroplating facility through the definitions in § 63.341(a). Alternatively, an owner or operator of a facility with a maximum cumulative potential rectifier capacity of 60 million amp-hr/yr or more may be considered small if the actual cumulative rectifier capacity is less than 60 million amp-hr/yr as demonstrated using the following procedures:

(A) If records show that the facility's previous annual actual rectifier capacity was less than 60 million amp-hr/yr, by using nonresettable ampere-hr meters and keeping monthly records of actual ampere-hr usage for each 12-month rolling period following the compliance date in accordance with § 63.346(b)(12). The actual cumulative rectifier capacity for the previous 12-month rolling period shall be tabulated monthly by adding the capacity for the current month to the capacities for the previous 11 months; or

(B) By accepting a Federally-enforceable limit on the maximum cumulative potential rectifier capacity of a hard chromium electroplating facility and by maintaining monthly records in accordance with § 63.346(b)(12) to demonstrate that the limit has not been exceeded. The actual cumulative rectifier capacity for the previous 12-month rolling period shall be tabulated monthly by adding the capacity for the current month to the capacities for the previous 11 months.

(ii) Once the monthly records required to be kept by § 63.346(b)(12) and by this paragraph show that the actual cumulative rectifier capacity over the previous 12-month rolling period corresponds to the large designation, the owner or operator is subject to the emission limitation identified in paragraph (c)(1)(i) of this section, in accordance with the compliance schedule of § 63.343(a)(5).

(d) *Standards for decorative chromium electroplating tanks using a chromic acid bath and chromium anodizing tanks.* During tank operation, each owner or operator of an existing, new, or reconstructed affected source shall control chromium emissions discharged to the

atmosphere from that affected source by either:

(1) Not allowing the concentration of total chromium in the exhaust gas stream discharged to the atmosphere to exceed 0.01 mg/dscm ( $4.4 \times 10^{-6}$  gr/dscf); or

(2) If a chemical fume suppressant containing a wetting agent is used, by not allowing the surface tension of the electroplating or anodizing bath contained within the affected source to exceed 45 dynes per centimeter (dynes/cm) ( $3.1 \times 10^{-3}$  pound-force per foot [lb/ft]) at any time during operation of the tank.

(e) *Standards for decorative chromium electroplating tanks using a trivalent chromium bath.* (1) Each owner or operator of an existing, new, or reconstructed decorative chromium electroplating tank that uses a trivalent chromium bath that incorporates a wetting agent as a bath ingredient is subject to the recordkeeping and reporting requirements of §§ 63.346(b)(14) and 63.347(i), but are not subject to the work practice requirements of paragraph (f) of this section, or the continuous compliance monitoring requirements in § 63.343(c). The wetting agent must be an ingredient in the trivalent chromium bath components purchased from vendors.

(2) Each owner or operator of an existing, new, or reconstructed decorative chromium electroplating tank that uses a trivalent chromium bath that does not incorporate a wetting agent as a bath ingredient is subject to the standards of paragraph (d) of this section.

(3) Each owner or operator of existing, new, or reconstructed decorative chromium electroplating tank that had been using a trivalent chromium bath that incorporates a wetting agent and ceases using this type of bath must fulfill the reporting requirements of § 63.347(i)(3) and comply with the applicable emission limitation within the timeframe specified in § 63.343(a)(7).

(f) *Work practice standards.* The work practice standards of this section address operation and maintenance practices. All owners or operators subject to the standards in paragraphs (c) and (d) of this section are subject to these work practice standards.

(1)(i) At all times, including periods of startup, shutdown, and malfunction, owners or operators shall operate and maintain any affected source, including associated air pollution control devices and monitoring equipment, in a manner consistent with good air pollution control practices, consistent with the operation and maintenance plan required by paragraph (f)(3) of this section.

(ii) Malfunctions shall be corrected as soon as practicable after their occurrence in accordance with the operation and maintenance plan required by paragraph (f)(3) of this section.

(iii) Operation and maintenance requirements established pursuant to section 112 of the Act are enforceable independent of emissions limitations or other requirements in relevant standards.

(2)(i) Determination of whether acceptable operation and maintenance procedures are being used will be based on information available to the Administrator, which may include, but is not limited to, monitoring results; review of the operation and maintenance plan, procedures, and records; and inspection of the source.

(ii) Based on the results of a determination made under paragraph (f)(2)(i) of this section, the Administrator may require that an owner or operator of an affected source make changes to the operation and maintenance plan required by paragraph (f)(3) of this section for that source. Revisions may be required if the Administrator finds that the plan:

(A) Does not address a malfunction that has occurred;

(B) Fails to provide for the operation of the affected source, the air pollution control techniques, or the control system and process monitoring equipment during a malfunction in a manner consistent with good air pollution control practices; or

(C) Does not provide adequate procedures for correcting malfunctioning process equipment, air pollution control techniques, or monitoring equipment as quickly as practicable.

(3) *Operation and maintenance plan.* (i) The owner or operator of an affected source subject to the work practices of

this paragraph (f) shall prepare an operation and maintenance plan to be implemented no later than the compliance date. The plan shall be incorporated by reference into the source's title V permit, if and when a title V permit is required. The plan shall include the following elements:

(A) The plan shall specify the operation and maintenance criteria for the affected source, the add-on air pollution control device (if such a device is used to comply with the emission limits), and the process and control system monitoring equipment, and shall include a standardized checklist to document the operation and maintenance of this equipment;

(B) For sources using an add-on air pollution control device or monitoring equipment to comply with this subpart, the plan shall incorporate the work practice standards for that device or monitoring equipment, as identified in Table 1 of this section, if the specific equipment used is identified in Table 1 of this section;

(C) If the specific equipment used is not identified in Table 1 of this section, the plan shall incorporate proposed work practice standards. These proposed work practice standards shall be submitted to the Administrator for approval as part of the submittal required under § 63.343(d);

(D) The plan shall specify procedures to be followed to ensure that equipment or process malfunctions due to poor maintenance or other preventable conditions do not occur; and

(E) The plan shall include a systematic procedure for identifying malfunctions of process equipment, add-on air pollution control devices, and process and control system monitoring equipment and for implementing corrective actions to address such malfunctions.

(ii) If the operation and maintenance plan fails to address or inadequately addresses an event that meets the characteristics of a malfunction at the time the plan is initially developed, the owner or operator shall revise the operation and maintenance plan within 45 days after such an event occurs. The revised plan shall include procedures for operating and maintaining the process equipment, add-on air pollution control device, or monitoring equip-

ment during similar malfunction events, and a program for corrective action for such events.

(iii) Recordkeeping associated with the operation and maintenance plan is identified in § 63.346(b). Reporting associated with the operation and maintenance plan is identified in § 63.347 (g) and (h) and paragraph (f)(3)(iv) of this section.

(iv) If actions taken by the owner or operator during periods of malfunction are inconsistent with the procedures specified in the operation and maintenance plan required by paragraph (f)(3)(i) of this section, the owner or operator shall record the actions taken for that event and shall report by phone such actions within 2 working days after commencing actions inconsistent with the plan. This report shall be followed by a letter within 7 working days after the end of the event, unless the owner or operator makes alternative reporting arrangements, in advance, with the Administrator.

(v) The owner or operator shall keep the written operation and maintenance plan on record after it is developed to be made available for inspection, upon request, by the Administrator for the life of the affected source or until the source is no longer subject to the provisions of this subpart. In addition, if the operation and maintenance plan is revised, the owner or operator shall keep previous (i.e., superseded) versions of the operation and maintenance plan on record to be made available for inspection, upon request, by the Administrator for a period of 5 years after each revision to the plan.

(vi) To satisfy the requirements of paragraph (f)(3) of this section, the owner or operator may use applicable standard operating procedure (SOP) manuals, Occupational Safety and Health Administration (OSHA) plans, or other existing plans, provided the alternative plans meet the requirements of this section.

(g) The standards in this section that apply to chromic acid baths shall not be met by using a reducing agent to change the form of chromium from hexavalent to trivalent.

[60 FR 4963, Jan. 25, 1995; 60 FR 33122, June 27, 1995, as amended at 61 FR 27787, June 3, 1996]

TABLE 1 TO § 63.342.—SUMMARY OF WORK PRACTICE STANDARDS

| Control technique                                       | Work practice standards   | Frequency  |
|---|---|--|
| Composite mesh-pad (CMP) system .....                   | 1. Visually inspect device to ensure there is proper drainage, no chronic acid buildup on the pads, and no evidence of chemical attack on the structural integrity of the device.<br>2. Visually inspect back portion of the mesh pad closest to the fan to ensure there is no breakthrough of chromic acid mist.<br>3. Visually inspect ductwork from tank to the control device to ensure there are no leaks .....  | 1. 1/quarter.<br>2. 1/quarter.   |
| Packed-bed scrubber (PSB) .....                         | 4. Perform washdown of the composite mesh-pads in accordance with manufacturers recommendations .....<br>1. Visually inspect device to ensure there is proper drainage, no chronic acid buildup on the packed beds, and no evidence of chemical attack on the structural integrity of the device.<br>2. Visually inspect back portion of the chevron blade mist eliminator to ensure that it is dry and there is no breakthrough of chromic acid mist.<br>3. Same as number 3 above ..... | 3. 1/quarter.<br>4. Per manufacturer.<br>1. 1/quarter.<br>2. 1/quarter.                                  |
| PBS/CMP system .....                                    | 4. Add fresh makeup water to the top of the packed bed <sup>a, b</sup> .....  | 3. 1/quarter.<br>4. Whenever makeup is added.<br>1. 1/quarter.<br>2. 1/quarter.                          |
| Fiber-bed mist eliminator <sup>c</sup> .....            | 2. Same as for CMP system .....   | 3. 1/quarter.  |
| Air pollution control device (APCD) not listed in rule. | 3. Same as for CMP system .....   | 4. Per manufacturer.<br>1. 1/quarter.  |
|   | 4. Same as for CMP system .....   | 2. 1/quarter.<br>3. Per manufacturer.<br>To be proposed by the source for approval by the Administrator. |
|   | 1. Visually inspect fiber-bed unit and prefiltering device to ensure there is proper drainage, no chromic acid buildup in the units, and no evidence of chemical attack on the structural integrity of the devices.<br>2. Visually inspect ductwork from tank or tanks to the control device to ensure there are no leaks .....   |  |
|   | 3. Perform washdown of fiber elements in accordance with manufacturers recommendations .....  |  |
|   | To be proposed by the source for approval by the Administrator .....  |  |
|   |   |  |
|   |   |  |
|   |   |  |
|   |   |  |
|   |   |  |
|   |   |  |

Monitoring Equipment

|                     |   |            |
|---------------------|---|------------|
| Pilot tube .....    | Backflush with water, or remove from the duct and rinse with fresh water. Replace in the duct and rotate 180 degrees to ensure that the same zero reading is obtained. Check pilot tube ends for damage. Replace pilot tube if cracked or fatigued. | 1/quarter. |
| Stalagmometer ..... | Follow manufacturer's recommendations .....   |            |

<sup>a</sup> If greater than 50 percent of the scrubber water is drained (e.g., for maintenance purposes), makeup water may be added to the scrubber basin.  
<sup>b</sup> For horizontal-flow scrubbers, top is defined as the section of the unit directly above the packing media such that the makeup water would flow perpendicular to the air flow through the packing. For vertical-flow units, the top is defined as the area downstream of the packing material such that the makeup water would flow counter-current to the air flow through the unit.  
<sup>c</sup> Work practice standards for the control device installed upstream of the fiber-bed mist eliminator to prevent plugging do not apply as long as the work practice standards for the fiber-bed unit are followed.

**§ 63.343 Compliance provisions.**

(a) *Compliance dates.* (1) The owner or operator of an existing affected source shall comply with the emission limitations in § 63.342 as follows:

(i) No later than 1 year after January 25, 1995, if the affected source is a decorative chromium electroplating tank; and

(ii) No later than 2 years after January 25, 1995, if the affected source is a

hard chromium electroplating tank or a chromium anodizing tank.

(2) The owner or operator of a new or reconstructed affected source that has an initial startup after January 25, 1995, shall comply immediately upon startup of the source. The owner or operator of a new or reconstructed affected source that has an initial startup after December 16, 1993 but before January 25, 1995, shall follow the compliance schedule of § 63.6(b)(1).

(3) The owner or operator of an existing area source that increases actual or potential emissions of hazardous air pollutants such that the area source becomes a major source must comply with the provisions for existing major sources, including the reporting provisions of § 63.347(g), immediately upon becoming a major source.

(4) The owner or operator of a new area source (i.e., an area source for which construction or reconstruction was commenced after December 16, 1993) that increases actual or potential emissions of hazardous air pollutants such that the area source becomes a major source must comply with the provisions for new major sources, immediately upon becoming a major source.

(5) An owner or operator of an existing hard chromium electroplating tank or tanks located at a small, hard chromium electroplating facility that increases its maximum cumulative potential rectifier capacity, or its actual cumulative rectifier capacity, such that the facility becomes a large, hard chromium electroplating facility must comply with the requirements of § 63.342(c)(1)(i) for all hard chromium electroplating tanks at the facility no later than 1 year after the month in which monthly records required by §§ 63.342(c)(2) and 63.346(b)(12) show that the large designation is met, or by the compliance date specified in paragraph (a)(1)(ii) of this section, whichever is later.

(6) *Request for an extension of compliance.* An owner or operator of an affected source or sources that requests an extension of compliance shall do so in accordance with this paragraph and the applicable paragraphs of § 63.6(i). When the owner or operator is requesting the extension for more than one affected source located at the facility, then only one request may be submitted for all affected sources at the facility.

(i) The owner or operator of an existing affected source who is unable to comply with a relevant standard under this subpart may request that the Administrator (or a State, when the State has an approved part 70 permit program and the source is required to obtain a part 70 permit under that pro-

gram, or a State, when the State has been delegated the authority to implement and enforce the emission standard for that source) grant an extension allowing the owner or operator up to 1 additional year to comply with the standard for the affected source. The owner or operator of an affected source who has requested an extension of compliance under this paragraph and is otherwise required to obtain a title V permit for the source shall apply for such permit or apply to have the title V permit revised to incorporate the conditions of the extension of compliance. The conditions of an extension of compliance granted under this paragraph will be incorporated into the owner or operator's title V permit for the affected source(s) according to the provisions of 40 CFR part 70 or 40 CFR part 71, whichever is applicable.

(ii) Any request under this paragraph for an extension of compliance with a relevant standard shall be submitted in writing to the appropriate authority not later than 6 months before the affected source's compliance date as specified in this section.

(7) An owner or operator of a decorative chromium electroplating tank that uses a trivalent chromium bath that incorporates a wetting agent, and that ceases using the trivalent chromium process, must comply with the emission limitation now applicable to the tank within 1 year of switching bath operation.

(b) *Methods to demonstrate initial compliance.* (1) Except as provided in paragraphs (b)(2) and (b)(3) of this section, an owner or operator of an affected source subject to the requirements of this subpart is required to conduct an initial performance test as required under § 63.7, using the procedures and test methods listed in § 63.7 and § 63.344.

(2) If the owner or operator of an affected source meets all of the following criteria, an initial performance test is not required to be conducted under this subpart:

(i) The affected source is a decorative chromium electroplating tank or a chromium anodizing tank; and

(ii) A wetting agent is used in the plating or anodizing bath to inhibit chromium emissions from the affected source; and

(iii) The owner or operator complies with the applicable surface tension limit of §63.342(d)(2) as demonstrated through the continuous compliance monitoring required by paragraph (c)(5)(ii) of this section.

(3) If the affected source is a decorative chromium electroplating tank using a trivalent chromium bath, and the owner or operator is subject to the provisions of §63.342(e), an initial performance test is not required to be conducted under this subpart.

(c) *Monitoring to demonstrate continuous compliance.* The owner or operator of an affected source subject to the emission limitations of this subpart shall conduct monitoring according to the type of air pollution control technique that is used to comply with the emission limitation. The monitoring required to demonstrate continuous compliance with the emission limitations is identified in this section for the air pollution control techniques expected to be used by the owners or operators of affected sources.

(1) *Composite mesh-pad systems.* (i) During the initial performance test, the owner or operator of an affected source, or a group of affected sources under common control, complying with the emission limitations in §63.342 through the use of a composite mesh-pad system shall determine the outlet chromium concentration using the test methods and procedures in §63.344(c), and shall establish as a site-specific operating parameter the pressure drop across the system, setting the value that corresponds to compliance with the applicable emission limitation, using the procedures in §63.344(d)(5). An owner or operator may conduct multiple performance tests to establish a range of compliant pressure drop values, or may set as the compliant value the average pressure drop measured over the three test runs of one performance test and accept  $\pm 1$  inch of water column from this value as the compliant range.

(ii) On and after the date on which the initial performance test is required to be completed under §63.7, the owner or operator of an affected source, or group of affected sources under common control, shall monitor and record the pressure drop across the composite

mesh-pad system once each day that any affected source is operating. To be in compliance with the standards, the composite mesh-pad system shall be operated within  $\pm 1$  inch of water column of the pressure drop value established during the initial performance test, or shall be operated within the range of compliant values for pressure drop established during multiple performance tests.

(2) *Packed-bed scrubber systems.* (i) During the initial performance test, the owner or operator of an affected source, or group of affected sources under common control, complying with the emission limitations in §63.342 through the use of a packed-bed scrubber system shall determine the outlet chromium concentration using the procedures in §63.344(c), and shall establish as site-specific operating parameters the pressure drop across the system and the velocity pressure at the common inlet of the control device, setting the value that corresponds to compliance with the applicable emission limitation using the procedures in §63.344(d) (4) and (5). An owner or operator may conduct multiple performance tests to establish a range of compliant operating parameter values. Alternatively, the owner or operator may set as the compliant value the average pressure drop and inlet velocity pressure measured over the three test runs of one performance test, and accept  $\pm 1$  inch of water column from the pressure drop value and  $\pm 10$  percent from the velocity pressure value as the compliant range.

(ii) On and after the date on which the initial performance test is required to be completed under §63.7, the owner or operator of an affected source, or group of affected sources under common control, shall monitor and record the velocity pressure at the inlet to the packed-bed scrubber and the pressure drop across the scrubber system once each day that any affected source is operating. To be in compliance with the standards, the scrubber system shall be operated within  $\pm 10$  percent of the velocity pressure value established during the initial performance test, and within  $\pm 1$  inch of water column of the pressure drop value established during the initial performance test, or within

the range of compliant operating parameter values established during multiple performance tests.

(3) *Packed-bed scrubber/composite mesh-pad system.* The owner or operator of an affected source, or group of affected sources under common control, that uses a packed-bed scrubber in conjunction with a composite mesh-pad system to meet the emission limitations of §63.342 shall comply with the monitoring requirements for composite mesh-pad systems as identified in paragraph (c)(1) of this section.

(4) *Fiber-bed mist eliminator.* (i) During the initial performance test, the owner or operator of an affected source, or group of affected sources under common control, complying with the emission limitations in §63.342 through the use of a fiber-bed mist eliminator shall determine the outlet chromium concentration using the procedures in §63.344(c), and shall establish as a site-specific operating parameter the pressure drop across the fiber-bed mist eliminator and the pressure drop across the control device installed upstream of the fiber bed to prevent plugging, setting the value that corresponds to compliance with the applicable emission limitation using the procedures in §63.344(d)(5). An owner or operator may conduct multiple performance tests to establish a range of compliant pressure drop values, or may set as the compliant value the average pressure drop measured over the three test runs of one performance test and accept  $\pm 1$  inch of water column from this value as the compliant range.

(ii) On and after the date on which the initial performance test is required to be completed under §63.7, the owner or operator of an affected source, or group of affected sources under common control, shall monitor and record the pressure drop across the fiber-bed mist eliminator, and the control device installed upstream of the fiber bed to prevent plugging, once each day that any affected source is operating. To be in compliance with the standards, the fiber-bed mist eliminator and the upstream control device shall be operated within  $\pm 1$  inch of water column of the pressure drop value established during the initial performance test, or shall be operated within the range of compliant

values for pressure drop established during multiple performance tests.

(5) *Wetting agent-type or combination wetting agent-type/foam blanket fume suppressants.* (i) During the initial performance test, the owner or operator of an affected source complying with the emission limitations in §63.342 through the use of a wetting agent in the electroplating or anodizing bath shall determine the outlet chromium concentration using the procedures in §63.344(c). The owner or operator shall establish as the site-specific operating parameter the surface tension of the bath using Method 306B, appendix A of this part, setting the maximum value that corresponds to compliance with the applicable emission limitation. In lieu of establishing the maximum surface tension during the performance test, the owner or operator may accept 45 dynes/cm as the maximum surface tension value that corresponds to compliance with the applicable emission limitation. However, the owner or operator is exempt from conducting a performance test only if the criteria of paragraph (b)(2) of this section are met.

(ii) On and after the date on which the initial performance test is required to be completed under §63.7, the owner or operator of an affected source shall monitor the surface tension of the electroplating or anodizing bath. Operation of the affected source at a surface tension greater than the value established during the performance test, or greater than 45 dynes/cm if the owner or operator is using this value in accordance with paragraph (c)(5)(i) of this section, shall constitute noncompliance with the standards. The surface tension shall be monitored according to the following schedule:

(A) The surface tension shall be measured once every 4 hours during operation of the tank with a stalagmometer or a tensiometer as specified in Method 306B, appendix A of this part.

(B) The time between monitoring can be increased if there have been no exceedances. The surface tension shall be measured once every 4 hours of tank operation for the first 40 hours of tank operation after the compliance date. Once there are no exceedances during 40 hours of tank operation, surface tension measurement may be conducted

once every 8 hours of tank operation. Once there are no exceedances during 40 hours of tank operation, surface tension measurement may be conducted once every 40 hours of tank operation on an ongoing basis, until an exceedance occurs. The minimum frequency of monitoring allowed by this subpart is once every 40 hours of tank operation.

(C) Once an exceedance occurs as indicated through surface tension monitoring, the original monitoring schedule of once every 4 hours must be resumed. A subsequent decrease in frequency shall follow the schedule laid out in paragraph (c)(5)(ii)(B) of this section. For example, if an owner or operator had been monitoring an affected source once every 40 hours and an exceedance occurs, subsequent monitoring would take place once every 4 hours of tank operation. Once an exceedance does not occur for 40 hours of tank operation, monitoring can occur once every 8 hours of tank operation. Once an exceedance does not occur for 40 hours of tank operation on this schedule, monitoring can occur once every 40 hours of tank operation.

(iii) Once a bath solution is drained from the affected tank and a new solution added, the original monitoring schedule of once every 4 hours must be resumed, with a decrease in monitoring frequency allowed following the procedures of paragraphs (c)(5)(ii) (B) and (C) of this section.

(6) *Foam blanket-type fume suppressants.* (i) During the initial performance test, the owner or operator of an affected source complying with the emission limitations in §63.342 through the use of a foam blanket in the electroplating or anodizing bath shall determine the outlet chromium concentration using the procedures in §63.344(c), and shall establish as the site-specific operating parameter the thickness of the foam blanket, setting the minimum thickness that corresponds to compliance with the applicable emission limitation. In lieu of establishing the minimum foam blanket thickness during the performance test, the owner or operator may accept 2.54 centimeters (1 inch) as the minimum foam blanket thickness that corresponds to compliance with the appli-

cable emission limitation. All foam blanket measurements must be taken in close proximity to the workpiece or cathode area in the plating tank(s).

(ii) On and after the date on which the initial performance test is required to be completed under §63.7, the owner or operator of an affected source shall monitor the foam blanket thickness of the electroplating or anodizing bath. Operation of the affected source at a foam blanket thickness less than the value established during the performance test, or less than 2.54 cm (1 inch) if the owner or operator is using this value in accordance with paragraph (c)(6)(i) of this section, shall constitute noncompliance with the standards. The foam blanket thickness shall be measured according to the following schedule:

(A) The foam blanket thickness shall be measured once every 1 hour of tank operation.

(B) The time between monitoring can be increased if there have been no exceedances. The foam blanket thickness shall be measured once every hour of tank operation for the first 40 hours of tank operation after the compliance date. Once there are no exceedances for 40 hours of tank operation, foam blanket thickness measurement may be conducted once every 4 hours of tank operation. Once there are no exceedances during 40 hours of tank operation, foam blanket thickness measurement may be conducted once every 8 hours of tank operation on an ongoing basis, until an exceedance occurs. The minimum frequency of monitoring allowed by this subpart is once per 8 hours of tank operation.

(C) Once an exceedance occurs as indicated through foam blanket thickness monitoring, the original monitoring schedule of once every hour must be resumed. A subsequent decrease in frequency shall follow the schedule laid out in paragraph (c)(6)(ii)(B) of this section. For example, if an owner or operator had been monitoring an affected source once every 8 hours and an exceedance occurs, subsequent monitoring would take place once every hour of tank operation. Once an exceedance does not occur for 40 hours of tank operation, monitoring can

occur once every 4 hours of tank operation. Once an exceedance does not occur for 40 hours of tank operation on this schedule, monitoring can occur once every 8 hours of tank operation.

(iii) Once a bath solution is drained from the affected tank and a new solution added, the original monitoring schedule of once every hour must be resumed, with a decrease in monitoring frequency allowed following the procedures of paragraphs (c)(6)(ii) (B) and (C) of this section.

(7) *Fume suppressant/add-on control device.* (i) If the owner or operator of an affected source uses both a fume suppressant and add-on control device and both are needed to comply with the applicable emission limit, monitoring requirements as identified in paragraphs (c) (1) through (6) of this section, and the work practice standards of Table 1 of §63.342, apply for each of the control techniques used.

(ii) If the owner or operator of an affected source uses both a fume suppressant and add-on control device, but only one of these techniques is needed to comply with the applicable emission limit, monitoring requirements as identified in paragraphs (c) (1) through (6) of this section, and work practice standards of Table 1 of §63.342, apply only for the control technique used to achieve compliance.

(8) *Use of an alternative monitoring method.* (i) Requests and approvals of alternative monitoring methods shall be considered in accordance with §63.8(f)(1), (f)(3), (f)(4), and (f)(5).

(ii) After receipt and consideration of an application for an alternative monitoring method, the Administrator may approve alternatives to any monitoring methods or procedures of this subpart including, but not limited to, the following:

(A) Alternative monitoring requirements when installation or use of monitoring devices specified in this subpart would not provide accurate measurements due to interferences caused by substances within the effluent gases; or

(B) Alternative locations for installing monitoring devices when the owner or operator can demonstrate that installation at alternate locations will enable accurate and representative measurements.

(d) An owner or operator who uses an air pollution control device not listed in this section shall submit a description of the device, test results collected in accordance with §63.344(c) verifying the performance of the device for reducing chromium emissions to the atmosphere to the level required by this subpart, a copy of the operation and maintenance plan referenced in §63.342(f) including proposed work practice standards, and appropriate operating parameters that will be monitored to establish continuous compliance with the standards. The monitoring plan submitted identifying the continuous compliance monitoring is subject to the Administrator's approval.

[60 FR 4963, Jan. 25, 1995; 60 FR 33122, June 27, 1995]

**§63.344 Performance test requirements and test methods.**

(a) *Performance test requirements.* Performance tests shall be conducted using the test methods and procedures in this section and §63.7. Performance test results shall be documented in complete test reports that contain the information required by paragraphs (a)(1) through (a)(9) of this section. The test plan to be followed shall be made available to the Administrator prior to the testing, if requested.

- (1) A brief process description;
- (2) Sampling location description(s);
- (3) A description of sampling and analytical procedures and any modifications to standard procedures;
- (4) Test results;
- (5) Quality assurance procedures and results;
- (6) Records of operating conditions during the test, preparation of standards, and calibration procedures;
- (7) Raw data sheets for field sampling and field and laboratory analyses;
- (8) Documentation of calculations; and
- (9) Any other information required by the test method.

(b)(1) If the owner or operator of an affected source conducts performance testing at startup to obtain an operating permit in the State in which the affected source is located, the results of such testing may be used to demonstrate compliance with this subpart if:

(i) The test methods and procedures identified in paragraph (c) of this section were used during the performance test;

(ii) The performance test was conducted under representative operating conditions for the source;

(iii) The performance test report contains the elements required by paragraph (a) of this section; and

(iv) The owner or operator of the affected source for which the performance test was conducted has sufficient data to establish the operating parameter value(s) that correspond to compliance with the standards, as required for continuous compliance monitoring under § 63.343(c).

(2) The results of tests conducted prior to December 1991 in which Method 306A, appendix A of this part, was used to demonstrate the performance of a control technique are not acceptable.

(c) *Test methods.* Each owner or operator subject to the provisions of this subpart and required by § 63.343(b) to conduct an initial performance test shall use the test methods identified in this section to demonstrate compliance with the standards in § 63.342.

(1) Method 306 or Method 306A, "Termination of Chromium Emissions From Decorative and Hard Chromium Electroplating and Anodizing Operations," appendix A of this part shall be used to determine the chromium concentration from hard or decorative chromium electroplating tanks or chromium anodizing tanks. The sampling time and sample volume for each run of Methods 306 and 306A, appendix A of this part shall be at least 120 minutes and 1.70 dscm (60 dscf), respectively. Methods 306 and 306A, appendix A of this part allow the measurement of either total chromium or hexavalent chromium emissions. For the purposes of this standard, sources using chromic acid baths can demonstrate compliance with the emission limits of § 63.342 by measuring either total chromium or hexavalent chromium. Hence, the hexavalent chromium concentration measured by these methods is equal to the total chromium concentration for the affected operations.

(2) The California Air Resources Board (CARB) Method 425 (which is

available by contacting the California Air Resources Board, 1102 Q Street, Sacramento, California 95814) may be used to determine the chromium concentration from hard and decorative chromium electroplating tanks and chromium anodizing tanks if the following conditions are met:

(i) If a colorimetric analysis method is used, the sampling time and volume shall be sufficient to result in 33 to 66 micrograms of catch in the sampling train.

(ii) If Atomic Absorption Graphite Furnace (AAGF) or Ion Chromatography with a Post-column Reactor (ICPCR) analyses were used, the sampling time and volume should be sufficient to result in a sample catch that is 5 to 10 times the minimum detection limit of the analytical method (i.e., 1.0 microgram per liter of sample for AAGF and 0.5 microgram per liter of sample for ICPCR).

(iii) In the case of either paragraph (c)(2) (i) or (ii) of this section, a minimum of 3 separate runs must be conducted. The other requirements of § 63.7 that apply to affected sources, as indicated in Table 1 of this subpart, must also be met.

(3) Method 306B, "Surface Tension Measurement and Recordkeeping for Tanks Used at Decorative Chromium Electroplating and Anodizing Facilities," appendix A of this part shall be used to measure the surface tension of electroplating and anodizing baths.

(4) Alternate test methods may also be used if the method has been validated using Method 301, appendix A of this part and if approved by the Administrator. Procedures for requesting and obtaining approval are contained in § 63.7(f).

(d) *Establishing site-specific operating parameter values.* (1) Each owner or operator required to establish site-specific operating parameters shall follow the procedures in this section.

(2) All monitoring equipment shall be installed such that representative measurements of emissions or process parameters from the affected source are obtained. For monitoring equipment purchased from a vendor, verification of the operational status of the monitoring equipment shall include execution of the manufacturer's

written specifications or recommendations for installation, operation, and calibration of the system.

(i) Specifications for differential pressure measurement devices used to measure velocity pressure shall be in accordance with section 2.2 of Method 2 (40 CFR part 60, appendix A).

(ii) Specification for differential pressure measurement devices used to measure pressure drop across a control system shall be in accordance with manufacturer's accuracy specifications.

(3) The surface tension of electroplating and anodizing baths shall be measured using Method 306B, "Surface Tension Measurement and Recordkeeping for Tanks used at Decorative Chromium Electroplating and Anodizing Facilities," appendix A of this part. This method should also be followed when wetting agent type or combination wetting agent/foam blanket type fume suppressants are used to control chromium emissions from a hard chromium electroplating tank and surface tension measurement is conducted to demonstrate continuous compliance.

(4) The owner or operator of a source required to measure the velocity pressure at the inlet to an add-on air pollution control device in accordance with §63.343(c)(2), shall establish the site-specific velocity pressure as follows:

(i) Locate a velocity traverse port in a section of straight duct that connects the hooding on the plating tank or tanks with the control device. The port shall be located as close to the control system as possible, and shall be placed a minimum of 2 duct diameters downstream and 0.5 diameter upstream of any flow disturbance such as a bend, expansion, or contraction (see Method 1, 40 CFR part 60, appendix A). If 2.5 diameters of straight duct work does not exist, locate the port 0.8 of the duct diameter downstream and 0.2 of the duct diameter upstream from any flow disturbance.

(ii) A 12-point velocity traverse of the duct to the control device shall be conducted along a single axis according to Method 2 (40 CFR part 60, appendix A) using an S-type pitot tube; measurement of the barometric pressure and duct temperature at each traverse point is not required, but is suggested.

Mark the S-type pitot tube as specified in Method 1 (40 CFR part 60, appendix A) with 12 points. Measure the velocity pressure ( $\Delta p$ ) values for the velocity points and record. Determine the square root of the individual velocity point  $\Delta p$  values and average. The point with the square root value that comes closest to the average square root value is the point of average velocity. The  $\Delta p$  value measured for this point during the performance test will be used as the reference for future monitoring.

(5) The owner or operator of a source required to measure the pressure drop across the add-on air pollution control device in accordance with §63.343(c) (1) through (4) may establish the pressure drop in accordance with the following guidelines:

(i) Pressure taps shall be installed at any of the following locations:

(A) At the inlet and outlet of the control system. The inlet tap should be installed in the ductwork just prior to the control device and the corresponding outlet pressure tap should be installed on the outlet side of the control device prior to the blower or on the downstream side of the blower;

(B) On each side of the packed bed within the control system or on each side of each mesh pad within the control system; or

(C) On the front side of the first mesh pad and back side of the last mesh pad within the control system.

(ii) Pressure taps shall be sited at locations that are:

(A) Free from pluggage as possible and away from any flow disturbances such as cyclonic demisters.

(B) Situated such that no air infiltration at measurement site will occur that could bias the measurement.

(iii) Pressure taps shall be constructed of either polyethylene, polybutylene, or other nonreactive materials.

(iv) Nonreactive plastic tubing shall be used to connect the pressure taps to the device used to measure pressure drop.

(v) Any of the following pressure gauges can be used to monitor pressure drop: a magnehelic gauge, an inclined manometer, or a "U" tube manometer.

(vi) Prior to connecting any pressure lines to the pressure gauge(s), each gauge should be zeroed. No calibration of the pressure gauges is required.

(e) *Special compliance provisions for multiple sources controlled by a common add-on air pollution control device.* (1) This section identifies procedures for measuring the outlet chromium concentration from an add-on air pollution control device that is used to control multiple sources that may or may not include sources not affected by this subpart.

(2) When multiple affected sources performing the same type of operation (e.g., all are performing hard chromium electroplating), and subject to the same emission limitation, are controlled with an add-on air pollution control device that is not controlling emissions from any other type of affected operation or from any non-affected sources, the applicable emission limitation identified in §63.342 must be met at the outlet of the add-on air pollution control device.

(3) When multiple affected sources performing the same type of operation and subject to the same emission limitation are controlled with a common add-on air pollution control device that is also controlling emissions from sources not affected by these standards, the following procedures should be followed to determine compliance with the applicable emission limitation in §63.342:

(i) Calculate the cross-sectional area of each inlet duct (i.e., uptakes from each hood) including those not affected by the standard.

(ii) Determine the total sample time per test run by dividing the total inlet area from all tanks connected to the control system by the total inlet area for all ducts associated with affected sources, and then multiply this number by 2 hours. The calculated time is the minimum sample time required per test run.

(iii) Perform Method 306 testing and calculate an outlet mass emission rate.

(iv) Determine the total ventilation rate from the affected sources by using equation 1:

$$VR_{tot} \times \frac{IDA_i}{\sum IA_{total}} = VR_{inlet} \quad (1)$$

where  $VR_{tot}$  is the average total ventilation rate in dscm/min for the three test runs as determined at the outlet by means of the Method 306 testing;  $IDA_i$  is the total inlet area for all ducts associated with affected sources;  $IA_{total}$  is the sum of all inlet duct areas from both affected and nonaffected sources; and  $VR_{inlet}$  is the total ventilation rate from all inlet ducts associated with affected sources.

(v) Establish the allowable mass emission rate of the system ( $AMR_{sys}$ ) in milligrams of total chromium per hour (mg/hr) using equation 2:

$$\sum VR_{inlet} \times EL \times 60 \text{ minutes/hours} = AMR_{sys} \quad (2)$$

where  $\sum VR_{inlet}$  is the total ventilation rate in dscm/min from the affected sources, and EL is the applicable emission limitation from §63.342 in mg/dscm. The allowable mass emission rate ( $AMR_{sys}$ ) calculated from equation 2 should be equal to or more than the outlet three-run average mass emission rate determined from Method 306 testing in order for the source to be in compliance with the standard.

(4) When multiple affected sources performing different types of operations (e.g., hard chromium electroplating, decorative chromium electro-

plating, or chromium anodizing) are controlled by a common add-on air pollution control device that may or may not also be controlling emissions from sources not affected by these standards, or if the affected sources controlled by the common add-on air pollution control device perform the same operation but are subject to different emission limitations (e.g., because one is a new hard chromium plating tank

and one is an existing small, hard chromium plating tank), the following procedures should be followed to determine compliance with the applicable emission limitation in §63.342:

(i) Follow the steps outlined in paragraphs (e)(3)(i) through (e)(3)(iii) of this section.

(ii) Determine the total ventilation rate for each type of affected source using equation 3:

$$VR_{tot} \times \frac{IDA_{i,a}}{\sum IA_{total}} = VR_{inlet,a} \quad (3)$$

where  $VR_{tot}$  is the average total ventilation rate in dscm/min for the three test runs as determined at the outlet by means of the Method 306 testing;  $IDA_{i,a}$  is the total inlet duct area for all ducts conveying chromic acid from each type of affected source performing the same operation, or each type of affected source subject to the same emission limitation;  $IA_{total}$  is the sum of all duct areas from both affected and non-affected sources; and  $VR_{inlet,a}$  is the total ventilation rate from all inlet ducts conveying chromic acid from each type of affected source performing the same operation, or each type of affected source subject to the same emission limitation.

(iii) Establish the allowable mass emission rate in mg/hr for each type of affected source that is controlled by the add-on air pollution control device using equation 4, 5, 6, or 7 as appropriate:

$$VR_{hc1} \times EL_{hc1} \times 60 \text{ minutes/hour} = \frac{AMR_{hc1}}{60} \quad (4)$$

$$VR_{hc2} \times EL_{hc2} \times 60 \text{ minutes/hour} = \frac{AMR_{hc2}}{60} \quad (5)$$

$$VR_{dc} \times EL_{dc} \times 60 \text{ minutes/hour} = \frac{AMR_{dc}}{60} \quad (6)$$

$$VR_{ca} \times EL_{ca} \times 60 \text{ minutes/hour} = \frac{AMR_{ca}}{60} \quad (7)$$

where "hc" applies to the total of ventilation rates for all hard chromium electroplating tanks subject to the same emission limitation, "dc" applies to the total of ventilation rates for the decorative chromium electroplating tanks, "ca" applies to the total of ventilation rates for the chromium anodizing tanks, and EL is the applicable emission limitation from §63.342 in mg/dscm. There are two equations for hard

chromium electroplating tanks because different emission limitations may apply (e.g., a new tank versus an existing, small tank).

(iv) Establish the allowable mass emission rate (AMR) in mg/hr for the system using equation 8, including each type of affected source as appropriate:

$$AMR_{hc1} + AMR_{hc2} + AMR_{dc} + AMR_{ca} = AMR_{sys} \quad (8)$$

The allowable mass emission rate calculated from equation 8 should be equal to or more than the outlet three-run average mass emission rate determined from Method 306 testing in order for the source to be in compliance with the standards.

(5) Each owner or operator that uses the special compliance provisions of this paragraph to demonstrate compliance with the emission limitations of §63.342 shall submit the measurements and calculations to support these compliance methods with the notification of compliance status required by §63.347(e).

(6) Each owner or operator that uses the special compliance provisions of this section to demonstrate compliance with the emission limitations of §63.342 shall repeat these procedures if a tank is added or removed from the control system regardless of whether that tank is a nonaffected source. If the new non-affected tank replaces an existing non-affected tank of the same size and is connected to the control system through the same size inlet duct then this procedure does not have to be repeated.

[60 FR 4963, Jan. 25, 1995, as amended at 61 FR 27787, June 3, 1996]

**§63.345 Provisions for new and reconstructed sources.**

(a) This section identifies the preconstruction review requirements for new and reconstructed affected sources that are subject to, or become subject to, this subpart.

(b) *New or reconstructed affected sources.* The owner or operator of a new or reconstructed affected source is subject to §63.5(a), (b)(1), (b)(5), (b)(6), and (f)(1), as well as the provisions of this paragraph.

(1) After January 25, 1995, whether or not an approved permit program is effective in the State in which an affected source is (or would be) located, no person may construct a new affected source or reconstruct an affected source subject to this subpart, or reconstruct a source such that it becomes an affected source subject to this subpart, without submitting a notification of construction or reconstruction to the Administrator. The notification shall contain the information identified in paragraphs (b) (2) and (3) of this section, as appropriate.

(2) The notification of construction or reconstruction required under paragraph (b)(1) of this section shall include:

(i) The owner or operator's name, title, and address;

(ii) The address (i.e., physical location) or proposed address of the affected source if different from the owner's or operator's;

(iii) A notification of intention to construct a new affected source or make any physical or operational changes to an affected source that may meet or has been determined to meet the criteria for a reconstruction as defined in §63.2;

(iv) An identification of subpart N of this part as the basis for the notification;

(v) The expected commencement and completion dates of the construction or reconstruction;

(vi) The anticipated date of (initial) startup of the affected source;

(vii) The type of process operation to be performed (hard or decorative chromium electroplating, or chromium anodizing);

(viii) A description of the air pollution control technique to be used to control emissions from the affected source, such as preliminary design drawings and design capacity if an add-on air pollution control device is used; and

(ix) An estimate of emissions from the source based on engineering calculations and vendor information on control device efficiency, expressed in units consistent with the emission limits of this subpart. Calculations of emission estimates should be in suffi-

cient detail to permit assessment of the validity of the calculations.

(3) If a reconstruction is to occur, the notification required under paragraph (b)(1) of this section shall include the following in addition to the information required in paragraph (b)(2) of this section:

(i) A brief description of the affected source and the components to be replaced;

(ii) A brief description of the present and proposed emission control technique, including the information required by paragraphs (b)(2) (viii) and (ix) of this section;

(iii) An estimate of the fixed capital cost of the replacements and of constructing a comparable entirely new source;

(iv) The estimated life of the affected source after the replacements; and

(v) A discussion of any economic or technical limitations the source may have in complying with relevant standards or other requirements after the proposed replacements. The discussion shall be sufficiently detailed to demonstrate to the Administrator's satisfaction that the technical or economic limitations affect the source's ability to comply with the relevant standard and how they do so.

(vi) If in the notification of reconstruction, the owner or operator designates the affected source as a reconstructed source and declares that there are no economic or technical limitations to prevent the source from complying with all relevant standards or requirements, the owner or operator need not submit the information required in paragraphs (b)(3) (iii) through (v) of this section.

(4) The owner or operator of a new or reconstructed affected source that submits a notification in accordance with paragraphs (b) (1) through (3) of this section is not subject to approval by the Administrator. Construction or reconstruction is subject only to notification and can begin upon submission of a complete notification.

(5) *Submittal timeframes.* After January 25, 1995, whether or not an approved permit program is effective in the State in which an affected source is (or would be) located, an owner or operator of a new or reconstructed affected

source shall submit the notification of construction or reconstruction required by paragraph (b)(1) of this section according to the following schedule:

(i) If construction or reconstruction commences after January 25, 1995, the notification shall be submitted as soon as practicable before the construction or reconstruction is planned to commence.

(ii) If the construction or reconstruction had commenced and initial start-up had not occurred before January 25, 1995, the notification shall be submitted as soon as practicable before start-up but no later than 60 days after January 25, 1995.

**§ 63.346 Recordkeeping requirements.**

(a) The owner or operator of each affected source subject to these standards shall fulfill all recordkeeping requirements outlined in this section and in the General Provisions to 40 CFR part 63, according to the applicability of subpart A of this part as identified in Table 1 of this subpart.

(b) The owner or operator of an affected source subject to the provisions of this subpart shall maintain the following records for such source:

(1) Inspection records for the add-on air pollution control device, if such a device is used, and monitoring equipment, to document that the inspection and maintenance required by the work practice standards of § 63.342(f) and Table 1 of § 63.342 have taken place. The record can take the form of a checklist and should identify the device inspected, the date of inspection, a brief description of the working condition of the device during the inspection, and any actions taken to correct deficiencies found during the inspection.

(2) Records of all maintenance performed on the affected source, the add-on air pollution control device, and monitoring equipment;

(3) Records of the occurrence, duration, and cause (if known) of each malfunction of process, add-on air pollution control, and monitoring equipment;

(4) Records of actions taken during periods of malfunction when such actions are inconsistent with the operation and maintenance plan;

(5) Other records, which may take the form of checklists, necessary to demonstrate consistency with the provisions of the operation and maintenance plan required by § 63.342(f)(3);

(6) Test reports documenting results of all performance tests;

(7) All measurements as may be necessary to determine the conditions of performance tests, including measurements necessary to determine compliance with the special compliance procedures of § 63.344(e);

(8) Records of monitoring data required by § 63.343(c) that are used to demonstrate compliance with the standard including the date and time the data are collected;

(9) The specific identification (i.e., the date and time of commencement and completion) of each period of excess emissions, as indicated by monitoring data, that occurs during malfunction of the process, add-on air pollution control, or monitoring equipment;

(10) The specific identification (i.e., the date and time of commencement and completion) of each period of excess emissions, as indicated by monitoring data, that occurs during periods other than malfunction of the process, add-on air pollution control, or monitoring equipment;

(11) The total process operating time of the affected source during the reporting period;

(12) Records of the actual cumulative rectifier capacity of hard chromium electroplating tanks at a facility expended during each month of the reporting period, and the total capacity expended to date for a reporting period, if the owner or operator is using the actual cumulative rectifier capacity to determine facility size in accordance with § 63.342(c)(2);

(13) For sources using fume suppressants to comply with the standards, records of the date and time that fume suppressants are added to the electroplating or anodizing bath;

(14) For sources complying with § 63.342(e), records of the bath components purchased, with the wetting agent clearly identified as a bath constituent contained in one of the components;

(15) Any information demonstrating whether a source is meeting the requirements for a waiver of record-keeping or reporting requirements, if the source has been granted a waiver under § 63.10(f); and

(16) All documentation supporting the notifications and reports required by § 63.9, § 63.10, and § 63.347.

(c) All records shall be maintained for a period of 5 years in accordance with § 63.10(b)(1).

**§ 63.347 Reporting requirements.**

(a) The owner or operator of each affected source subject to these standards shall fulfill all reporting requirements outlined in this section and in the General Provisions to 40 CFR part 63, according to the applicability of subpart A as identified in Table 1 of this subpart. These reports shall be made to the Administrator at the appropriate address as identified in § 63.13 or to the delegated State authority.

(1) Reports required by subpart A of this part and this section may be sent by U.S. mail, fax, or by another courier.

(i) Submittals sent by U.S. mail shall be postmarked on or before the specified date.

(ii) Submittals sent by other methods shall be received by the Administrator on or before the specified date.

(2) If acceptable to both the Administrator and the owner or operator of an affected source, reports may be submitted on electronic media.

(b) The reporting requirements of this section apply to the owner or operator of an affected source when such source becomes subject to the provisions of this subpart.

(c) *Initial notifications.* (1) The owner or operator of an affected source that has an initial startup before January 25, 1995, shall notify the Administrator in writing that the source is subject to this subpart. The notification shall be submitted no later than 180 calendar days after January 25, 1995, and shall contain the following information:

(i) The name, title, and address of the owner or operator;

(ii) The address (i.e., physical location) of each affected source;

(iii) A statement that subpart N of this part is the basis for this notification;

(iv) Identification of the applicable emission limitation and compliance date for each affected source;

(v) A brief description of each affected source, including the type of process operation performed;

(vi) For sources performing hard chromium electroplating, the maximum potential cumulative potential rectifier capacity;

(vii) For sources performing hard chromium electroplating, a statement of whether the affected source(s) is located at a small or a large, hard chromium electroplating facility and whether this will be demonstrated through actual or maximum potential cumulative rectifier capacity;

(viii) For sources performing hard chromium electroplating tanks, a statement of whether the owner or operator of an affected source(s) will limit the maximum potential cumulative rectifier capacity in accordance with § 63.342(c)(2) such that the hard chromium electroplating facility is considered small; and

(ix) A statement of whether the affected source is located at a major source or an area source as defined in § 63.2.

(2) The owner or operator of a new or reconstructed affected source that has an initial startup after January 25, 1995 shall submit an initial notification (in addition to the notification of construction or reconstruction required by § 63.345(b) as follows:

(i) A notification of the date when construction or reconstruction was commenced, shall be submitted simultaneously with the notification of construction or reconstruction, if construction or reconstruction was commenced before January 25, 1995;

(ii) A notification of the date when construction or reconstruction was commenced, shall be submitted no later than 30 calendar days after such date, if construction or reconstruction was commenced after January 25, 1995; and

(iii) A notification of the actual date of startup of the source shall be submitted within 30 calendar days after such date.

(d) *Notification of performance test.* (1) The owner or operator of an affected source shall notify the Administrator in writing of his or her intention to conduct a performance test at least 60 calendar days before the test is scheduled to begin to allow the Administrator to have an observer present during the test. Observation of the performance test by the Administrator is optional.

(2) In the event the owner or operator is unable to conduct the performance test as scheduled, the provisions of § 63.7(b)(2) apply.

(e) *Notification of compliance status.* (1) A notification of compliance status is required each time that an affected source becomes subject to the requirements of this subpart.

(2) If the State in which the source is located has not been delegated the authority to implement the rule, each time a notification of compliance status is required under this part, the owner or operator of an affected source shall submit to the Administrator a notification of compliance status, signed by the responsible official (as defined in § 63.2) who shall certify its accuracy, attesting to whether the affected source has complied with this subpart. If the State has been delegated the authority, the notification of compliance status shall be submitted to the appropriate authority. The notification shall list for each affected source:

(i) The applicable emission limitation and the methods that were used to determine compliance with this limitation;

(ii) If a performance test is required by this subpart, the test report documenting the results of the performance test, which contains the elements required by § 63.344(a), including measurements and calculations to support the special compliance provisions of § 63.344(e) if these are being followed;

(iii) The type and quantity of hazardous air pollutants emitted by the source reported in mg/dscm or mg/hr if the source is using the special provisions of § 63.344(e) to comply with the standards. (If the owner or operator is subject to the construction and reconstruction provisions of § 63.345 and had previously submitted emission esti-

mates, the owner or operator shall state that this report corrects or verifies the previous estimate.) For sources not required to conduct a performance test in accordance with § 63.343(b), the surface tension measurement may fulfill this requirement;

(iv) For each monitored parameter for which a compliant value is to be established under § 63.343(c), the specific operating parameter value, or range of values, that corresponds to compliance with the applicable emission limit;

(v) The methods that will be used to determine continuous compliance, including a description of monitoring and reporting requirements, if methods differ from those identified in this subpart;

(vi) A description of the air pollution control technique for each emission point;

(vii) A statement that the owner or operator has completed and has on file the operation and maintenance plan as required by the work practice standards in § 63.342(f);

(viii) If the owner or operator is determining facility size based on actual cumulative rectifier capacity in accordance with § 63.342(c)(2), records to support that the facility is small. For existing sources, records from any 12-month period preceding the compliance date shall be used or a description of how operations will change to meet a small designation shall be provided. For new sources, records of projected rectifier capacity for the first 12-month period of tank operation shall be used;

(ix) A statement by the owner or operator of the affected source as to whether the source has complied with the provisions of this subpart.

(3) For sources required to conduct a performance test by § 63.343(b), the notification of compliance status shall be submitted to the Administrator no later than 90 calendar days following completion of the compliance demonstration required by § 63.7 and § 63.343(b).

(4) For sources that are not required to complete a performance test in accordance with § 63.343(b), the notification of compliance status shall be submitted to the Administrator no later than 30 days after the compliance date specified in § 63.343(a).

(f) *Reports of performance test results.*

(1) If the State in which the source is located has not been delegated the authority to implement the rule, the owner or operator of an affected source shall report to the Administrator the results of any performance test conducted as required by §63.7 or §63.343(b). If the State has been delegated the authority, the owner or operator of an affected source should report performance test results to the appropriate authority.

(2) Reports of performance test results shall be submitted no later than 90 days following the completion of the performance test, and shall be submitted as part of the notification of compliance status required by paragraph (e) of this section.

(g) *Ongoing compliance status reports for major sources.* (1) The owner or operator of an affected source that is located at a major source site shall submit a summary report to the Administrator to document the ongoing compliance status of the affected source. The report shall contain the information identified in paragraph (g)(3) of this section, and shall be submitted semiannually except when:

(i) The Administrator determines on a case-by-case basis that more frequent reporting is necessary to accurately assess the compliance status of the source; or

(ii) The monitoring data collected by the owner or operator of the affected source in accordance with §63.343(c) show that the emission limit has been exceeded, in which case quarterly reports shall be submitted. Once an owner or operator of an affected source reports an exceedance, ongoing compliance status reports shall be submitted quarterly until a request to reduce reporting frequency under paragraph (g)(2) of this section is approved.

(2) *Request to reduce frequency of ongoing compliance status reports.* (i) An owner or operator who is required to submit ongoing compliance status reports on a quarterly (or more frequent basis) may reduce the frequency of reporting to semiannual if all of the following conditions are met:

(A) For 1 full year (e.g., 4 quarterly or 12 monthly reporting periods), the ongoing compliance status reports

demonstrate that the affected source is in compliance with the relevant emission limit;

(B) The owner or operator continues to comply with all applicable recordkeeping and monitoring requirements of subpart A of this part and this subpart; and

(C) The Administrator does not object to a reduced reporting frequency for the affected source, as provided in paragraphs (g)(2) (ii) and (iii) of this section.

(ii) The frequency of submitting ongoing compliance status reports may be reduced only after the owner or operator notifies the Administrator in writing of his or her intention to make such a change, and the Administrator does not object to the intended change. In deciding whether to approve a reduced reporting frequency, the Administrator may review information concerning the source's entire previous performance history during the 5-year recordkeeping period prior to the intended change, or the recordkeeping period since the source's compliance date, whichever is shorter. Records subject to review may include performance test results, monitoring data, and evaluations of an owner or operator's conformance with emission limitations and work practice standards. Such information may be used by the Administrator to make a judgment about the source's potential for noncompliance in the future. If the Administrator disapproves the owner or operator's request to reduce reporting frequency, the Administrator will notify the owner or operator in writing within 45 days after receiving notice of the owner or operator's intention. The notification from the Administrator to the owner or operator will specify the grounds on which the disapproval is based. In the absence of a notice of disapproval within 45 days, approval is automatically granted.

(iii) As soon as the monitoring data required by §63.343(c) show that the source is not in compliance with the relevant emission limit, the frequency of reporting shall revert to quarterly, and the owner shall state this exceedance in the ongoing compliance status report for the next reporting period. After demonstrating ongoing

compliance with the relevant emission limit for another full year, the owner or operator may again request approval from the Administrator to reduce the reporting frequency as allowed by paragraph (g)(2) of this section.

(3) *Contents of ongoing compliance status reports.* The owner or operator of an affected source for which compliance monitoring is required in accordance with § 63.343(c) shall prepare a summary report to document the ongoing compliance status of the source. The report must contain the following information:

(i) The company name and address of the affected source;

(ii) An identification of the operating parameter that is monitored for compliance determination, as required by § 63.343(c);

(iii) The relevant emission limitation for the affected source, and the operating parameter value, or range of values, that correspond to compliance with this emission limitation as specified in the notification of compliance status required by paragraph (e) of this section;

(iv) The beginning and ending dates of the reporting period;

(v) A description of the type of process performed in the affected source;

(vi) The total operating time of the affected source during the reporting period;

(vii) If the affected source is a hard chromium electroplating tank and the owner or operator is limiting the maximum cumulative rectifier capacity in accordance with § 63.342(c)(2), the actual cumulative rectifier capacity expended during the reporting period, on a month-by-month basis;

(viii) A summary of operating parameter values, including the total duration of excess emissions during the reporting period as indicated by those values, the total duration of excess emissions expressed as a percent of the total source operating time during that reporting period, and a breakdown of the total duration of excess emissions during the reporting period into those that are due to process upsets, control equipment malfunctions, other known causes, and unknown causes;

(ix) A certification by a responsible official, as defined in § 63.2, that the

work practice standards in § 63.342(f) were followed in accordance with the operation and maintenance plan for the source;

(x) If the operation and maintenance plan required by § 63.342(f)(3) was not followed, an explanation of the reasons for not following the provisions, an assessment of whether any excess emission and/or parameter monitoring exceedances are believed to have occurred, and a copy of the report(s) required by § 63.342(f)(3)(iv) documenting that the operation and maintenance plan was not followed;

(xi) A description of any changes in monitoring, processes, or controls since the last reporting period;

(xii) The name, title, and signature of the responsible official who is certifying the accuracy of the report; and

(xiii) The date of the report.

(4) When more than one monitoring device is used to comply with the continuous compliance monitoring required by § 63.343(c), the owner or operator shall report the results as required for each monitoring device. However, when one monitoring device is used as a backup for the primary monitoring device, the owner or operator shall only report the results from the monitoring device used to meet the monitoring requirements of this subpart. If both devices are used to meet these requirements, then the owner or operator shall report the results from each monitoring device for the relevant compliance period.

(h) *Ongoing compliance status reports for area sources.* The requirements of this paragraph do not alleviate affected area sources from complying with the requirements of State or Federal operating permit programs under 40 CFR part 71.

(1) The owner or operator of an affected source that is located at an area source site shall prepare a summary report to document the ongoing compliance status of the affected source. The report shall contain the information identified in paragraph (g)(3) of this section, shall be completed annually and retained on site, and made available to the Administrator upon request. The report shall be completed annually except as provided in paragraph (h)(2) of this section.

(2) *Reports of exceedances.* (i) If both of the following conditions are met, semi-annual reports shall be prepared and submitted to the Administrator:

(A) The total duration of excess emissions (as indicated by the monitoring data collected by the owner or operator of the affected source in accordance with §63.343(c)) is 1 percent or greater of the total operating time for the reporting period; and

(B) The total duration of malfunctions of the add-on air pollution control device and monitoring equipment is 5 percent or greater of the total operating time.

(ii) Once an owner or operator of an affected source reports an exceedance as defined in paragraph (h)(2)(i) of this section, ongoing compliance status reports shall be submitted semiannually until a request to reduce reporting frequency under paragraph (h)(3) of this section is approved.

(iii) The Administrator may determine on a case-by-case basis that the summary report shall be completed more frequently and submitted, or that the annual report shall be submitted instead of being retained on site, if these measures are necessary to accurately assess the compliance status of the source.

(3) *Request to reduce frequency of ongoing compliance status reports.* (i) An owner or operator who is required to submit ongoing compliance status reports on a semiannual (or more frequent) basis, or is required to submit its annual report instead of retaining it on site, may reduce the frequency of reporting to annual and/or be allowed to maintain the annual report onsite if all of the following conditions are met:

(A) For 1 full year (e.g., 2 semiannual or 4 quarterly reporting periods), the ongoing compliance status reports demonstrate that the affected source is in compliance with the relevant emission limit;

(B) The owner or operator continues to comply with all applicable record-keeping and monitoring requirements of subpart A of this part and this subpart; and

(C) The Administrator does not object to a reduced reporting frequency for the affected source, as provided in

paragraphs (h)(3) (ii) and (iii) of this section.

(ii) The frequency of submitting ongoing compliance status reports may be reduced only after the owner or operator notifies the Administrator in writing of his or her intention to make such a change, and the Administrator does not object to the intended change. In deciding whether to approve a reduced reporting frequency, the Administrator may review information concerning the source's previous performance history during the 5-year record-keeping period prior to the intended change, or the recordkeeping period since the source's compliance date, whichever is shorter. Records subject to review may include performance test results, monitoring data, and evaluations of an owner or operator's conformance with emission limitations and work practice standards. Such information may be used by the Administrator to make a judgement about the source's potential for noncompliance in the future. If the Administrator disapproves the owner or operator's request to reduce reporting frequency, the Administrator will notify the owner or operator in writing within 45 days after receiving notice of the owner or operator's intention. The notification from the Administrator to the owner or operator will specify the grounds on which the disapproval is based. In the absence of a notice of disapproval within 45 days, approval is automatically granted.

(iii) As soon as the monitoring data required by §63.343(c) show that the source is not in compliance with the relevant emission limit, the frequency of reporting shall revert to semiannual, and the owner shall state this exceedance in the ongoing compliance status report for the next reporting period. After demonstrating ongoing compliance with the relevant emission limit for another full year, the owner or operator may again request approval from the Administrator to reduce the reporting frequency as allowed by paragraph (h)(3) of this section.

(i) *Reports associated with trivalent chromium baths.* The requirements of this paragraph do not alleviate affected

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sources from complying with the requirements of State or Federal operating permit programs under title V. Owners or operators complying with the provisions of §63.342(e) are not subject to paragraphs (a) through (h) of this section, but must instead submit the following reports:

(1) Within 180 days after January 25, 1995, submit an initial notification that includes:

(i) The same information as is required by paragraphs (c)(1) (i) through (v) of this section; and

(ii) A statement that a trivalent chromium process that incorporates a wetting agent will be used to comply with §63.342(e); and

(iii) The list of bath components that comprise the trivalent chromium bath, with the wetting agent clearly identified; and

(2) Within 30 days of the compliance date specified in §63.343(a), a notifica-

tion of compliance status that contains an update of the information submitted in accordance with paragraph (i)(1) of this section or a statement that the information is still accurate; and

(3) Within 30 days of a change to the trivalent chromium electroplating process, a report that includes:

(i) A description of the manner in which the process has been changed and the emission limitation, if any, now applicable to the affected source;

(ii) If a different emission limitation applies, the applicable information required by paragraph (c)(1) of this section; and

(iii) The notification and reporting requirements of paragraphs (d), (e), (f), (g), and (h) of this section, which shall be submitted in accordance with the schedules identified in those paragraphs.

[60 FR 4963, Jan. 25, 1995, as amended at 61 FR 27787, June 3, 1996]

TABLE 1 TO SUBPART N OF PART 63—GENERAL PROVISIONS APPLICABILITY TO SUBPART N

| General provisions reference | Applies to subpart N | Comment   |
|------------------------------|----------------------|---|
| 63.1(a)(1) .....             | Yes .....            | Additional terms defined in §63.341; when overlap between subparts A and N occurs, subpart N takes precedence.                              |
| 63.1(a)(2) .....             | Yes                  |   |
| 63.1(a)(3) .....             | Yes                  |   |
| 63.1(a)(4) .....             | Yes .....            | Subpart N clarifies the applicability of each paragraph in subpart A to sources subject to subpart N.                                       |
| 63.1(a)(6) .....             | Yes                  |   |
| 63.1(a)(7) .....             | Yes                  |   |
| 63.1(a)(8) .....             | Yes                  |   |
| 63.1(a)(10) .....            | Yes                  |   |
| 63.1(a)(11) .....            | Yes .....            | § 63.347(a) of subpart N also allows report submissions via fax and on electronic media.  |
| 63.1(a)(12)–(14) .....       | Yes                  |   |
| 63.1(b)(1) .....             | No .....             | § 63.340 of subpart N specifies applicability.  |
| 63.1(b)(2) .....             | Yes                  |   |
| 63.1(b)(3) .....             | No .....             | This provision in subpart A is being deleted. Also, all affected area and major sources are subject to subpart N; there are no exemptions.  |
| 63.1(c)(1) .....             | Yes .....            | Subpart N clarifies the applicability of each paragraph in subpart A to sources subject to subpart N.                                       |
| 63.1(c)(2) .....             | Yes .....            | Subpart N specifies permit requirements for area sources.   |
| 63.1(c)(4) .....             | Yes                  |   |
| 63.1(c)(5) .....             | No .....             | Subpart N clarifies that an area source that becomes a major source is subject to the requirements for major sources.                       |
| 63.1(e) .....                | Yes                  |   |
| 63.2 .....                   | Yes .....            | Additional terms defined in § 63.341; when overlap between subparts A and N occurs, subpart N takes precedence.                             |
| 63.3 .....                   | Yes .....            | Other units used in subpart N are defined in that subpart.  |
| 63.4 .....                   | Yes                  |   |
| 63.5(a) .....                | Yes .....            | Except replace the term “source” and “stationary source” in § 63.5(a) (1) and (2) of subpart A with “affected sources.”                     |
| 63.5(b)(1) .....             | Yes                  |   |
| 63.5(b)(3) .....             | Yes .....            | Applies only to major affected sources.   |
| 63.5(b)(4) .....             | No .....             | Subpart N (§ 63.345) specifies requirements for the notification of construction or reconstruction for affected sources that are not major. |
| 63.5(b)(5) .....             | Yes                  |   |
| 63.5(b)(6) .....             | Yes                  |   |

TABLE 1 TO SUBPART N OF PART 63—GENERAL PROVISIONS APPLICABILITY TO SUBPART N—Continued

| General provisions reference | Applies to subpart N | Comment  |
|------------------------------|----------------------|--|
| 63.5(d)(1)(i)                | No                   | § 63.345(c)(5) of subpart N specifies when the application or notification shall be submitted.   |
| 63.5(d)(1)(ii)               | Yes                  | Applies to major affected sources that are new or reconstructed.   |
| 63.5(d)(1)(iii)              | Yes                  | Except information should be submitted with the Notification of Compliance Status required by § 63.347(e) of subpart N.  |
| 63.5(d)(2)                   | Yes                  | Applies to major affected sources that are new or reconstructed except: (1) replace "source" in § 63.5(d)(2) of subpart A with "affected source"; and (2) actual control efficiencies are submitted with the Notification of Compliance Status required by § 63.347(e).    |
| 63.5(d)(3)–(4)               | Yes                  | Applies to major affected sources that are new or reconstructed.   |
| 63.5(e)                      | Yes                  | Applies to major affected sources that are new or reconstructed.   |
| 63.5(f)(1)                   | Yes                  | Except replace "source" in § 63.5(f)(1) of subpart A with "affected source."   |
| 63.5(f)(2)                   | No                   | New or reconstructed affected sources shall submit the request for approval of construction or reconstruction under § 63.5(f) of subpart A by the deadline specified in § 63.345(c)(5) of subpart N.   |
| 63.6(a)                      | Yes                  |  |
| 63.6(b)(1)–(2)               | Yes                  | Except replace "source" in § 63.6(b)(1)–(2) of part A with "affected source."  |
| 63.6(b)(3)–(4)               | Yes                  |  |
| 63.6(b)(5)                   | Yes                  | Except replace "source" in § 63.6(b)(5) of subpart A with "affected source."   |
| 63.6(b)(7)                   | No                   | Provisions for new area sources that become major sources are contained in § 63.343(a)(4) of subpart N.  |
| 63.6(c)(1)–(2)               | Yes                  | Except replace "source" in § 63.6(c)(1)–(2) of subpart A with "affected source."   |
| 63.6(c)(5)                   | No                   | Compliance provisions for existing area sources that become major sources are contained in § 63.343(a)(3) of subpart N.  |
| 63.6(e)                      | No                   | § 63.342(f) of subpart N contains work practice standards (operation and maintenance requirements) that override these provisions.   |
| 63.6(f)(1)                   | No                   | § 63.342(b) of subpart N specifies when the standards apply.   |
| 63.6(f)(2)(i)–(ii)           | Yes                  |  |
| 63.6(f)(2)(iii)              | No                   | § 63.344(b) of subpart N specifies instances in which previous performance test results for existing sources are acceptable.   |
| 63.6(f)(2)(iv)               | Yes                  |  |
| 63.6(f)(2)(v)                | Yes                  |  |
| 63.6(f)(3)                   | Yes                  |  |
| 63.6(g)                      | Yes                  |  |
| 63.6(h)                      | No                   | Subpart N does not contain any opacity or visible emission standards.  |
| 63.6(i)(1)                   | Yes                  |  |
| 63.6(i)(2)                   | Yes                  | Except replace "source" in § 63.6(i)(2)(i) and (ii) of subpart A with "affected source."   |
| 63.6(i)(3)                   | Yes                  |  |
| 63.6(i)(4)(i)                | No                   | § 63.343(a)(6) of subpart N specifies the procedures for obtaining an extension of compliance and the date by which such requests must be submitted.   |
| 63.6(i)(4)(ii)               | Yes                  |  |
| 63.6(i)(5)                   | Yes                  |  |
| 63.6(i)(6)(i)                | Yes                  | This paragraph only references "paragraph (i)(4) of this section" for compliance extension provisions. But, § 63.343(a)(6) of subpart N also contains provisions for requesting a compliance extension.  |
| 63.6(i)(6)(ii)               | Yes                  |  |
| 63.6(i)(7)                   | Yes                  |  |
| 63.6(i)(8)                   | Yes                  | This paragraph only references "paragraphs (i)(4) through (i)(6) of this section" for compliance extension provisions. But, § 63.343(a)(6) of subpart N also contains provisions for requesting a compliance extension.  |
| 63.6(i)(9)                   | Yes                  | This paragraph only references "paragraphs (i)(4) through (i)(6) of this section" and "paragraphs (i)(4) and (i)(5) of this section" for compliance extension provisions. But, § 63.343(a)(6) of subpart N also contains provisions for requesting a compliance extension. |
| 63.6(i)(10)(i)–(iv)          | Yes                  |  |
| 63.6(i)(10)(v)(A)            | Yes                  | This paragraph only references "paragraph (i)(4)" for compliance extension provisions. But, § 63.343(a)(6) of subpart N also contains provisions for requesting a compliance extension.  |
| 63.6(i)(10)(v)(B)            | Yes                  |  |
| 63.6(i)(11)                  | Yes                  |  |

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TABLE 1 TO SUBPART N OF PART 63—GENERAL PROVISIONS APPLICABILITY TO SUBPART N—Continued

| General provisions reference | Applies to subpart N | Comment  |
|------------------------------|----------------------|--|
| 63.6(i)(12)(i) .....         | Yes .....            | This paragraph only references "paragraph (i)(4)(i) or (i)(5) of this section" for compliance extension provisions. But, § 63.343(a)(6) of subpart N also contains provisions for requesting a compliance extension.                             |
| 63.6(i)(12)(ii)–(iii) .....  | Yes                  |  |
| 63.6(i)(13) .....            | Yes                  |  |
| 63.6(i)(14) .....            | Yes                  |  |
| 63.6(i)(16) .....            | Yes                  |  |
| 63.6(j) .....                | Yes                  |  |
| 63.7(a)(1) .....             | Yes                  |  |
| 63.7(a)(2)(i)–(vi) .....     | Yes                  |  |
| 63.7(a)(2)(ix) .....         | Yes                  |  |
| 63.7(a)(3) .....             | Yes                  |  |
| 63.7(b)(1) .....             | No .....             | § 63.347(d) of subpart N requires notification prior to the performance test. § 63.344(a) of subpart N requires submission of a site-specific test plan upon request.  |
| 63.7(b)(2) .....             | Yes                  |  |
| 63.7(c) .....                | No .....             | § 63.344(a) of subpart N specifies what the test plan should contain, but does not require test plan approval or performance audit samples.  |
| 63.7(d) .....                | Yes .....            |  |
| 63.7(e) .....                | Yes .....            | Except replace "source" in the first sentence of § 63.7(d) of subpart A with "affected source."<br>Subpart N also contains test methods specific to affected sources covered by that subpart.  |
| 63.7(f) .....                | Yes .....            |  |
| 63.7(g)(1) .....             | No .....             | § 63.344(c)(2) of subpart N identifies CARB Method 425 as acceptable under certain conditions.<br>Subpart N identifies the items to be reported in the compliance test [§ 63.344(a)] and the timeframe for submitting the results [§ 63.347(f)]. |
| 63.7(g)(3) .....             | Yes                  |  |
| 63.7(h)(1)–(2) .....         | Yes                  | This paragraph only references "§ 63.6(i)" for compliance extension provisions. But, § 63.343(a)(6) of subpart N also contains provisions for requesting a compliance extension.   |
| 63.7(h)(3)(i) .....          | Yes .....            |  |
| 63.7(h)(3)(ii)–(iii) .....   | Yes                  |  |
| 63.7(h)(4)–(5) .....         | Yes                  |  |
| 63.8(a)(1) .....             | Yes                  |  |
| 63.8(a)(2) .....             | No .....             |  |
| 63.8(a)(4) .....             | No                   |  |
| 63.8(b)(1) .....             | Yes                  |  |
| 63.8(b)(2) .....             | No .....             |  |
| 63.8(b)(3) .....             | No .....             |  |
| 63.8(c)(1)(i) .....          | No .....             | Work practice standards are contained in § 63.342(f) of subpart N.   |
| 63.8(c)(1)(ii) .....         | No .....             |  |
| 63.8(c)(1)(iii) .....        | No .....             | § 63.344(d) of subpart N specifies the monitoring location when there are multiple sources.<br>§ 63.347(g)(4) of subpart N identifies reporting requirements when multiple monitors are used.  |
| 63.8(c)(2)–(3) .....         | No .....             |  |
| 63.8(c)(4)–(7) .....         | No                   | Subpart N requires proper maintenance of monitoring devices expected to be used by sources subject to subpart N.<br>§ 63.342(f)(3)(iv) of subpart N specifies reporting when the O&M plan is not followed.                                       |
| 63.8(d) .....                | No .....             |  |
| 63.8(e) .....                | No .....             | § 63.343(f)(2) identifies the criteria for whether O&M procedures are acceptable.<br>§ 63.344(d)(2) requires appropriate use of monitoring devices.  |
| 63.8(f)(1) .....             | Yes                  |  |
| 63.8(f)(2) .....             | No .....             | Maintenance of monitoring devices is required by §§ 63.342(f) and 63.344(d)(2) of subpart N.<br>There are no performance evaluation procedures for the monitoring devices expected to be used to comply with subpart N.                          |
| 63.8(f)(3) .....             | Yes                  |  |
| 63.8(f)(4) .....             | Yes                  | Instances in which the Administrator may approve alternatives to the monitoring methods and procedures of subpart N are contained in § 63.343(c)(8) of subpart N.  |
| 63.8(f)(5) .....             | Yes                  |  |
| 63.8(f)(6) .....             | No .....             | Subpart N does not require the use of CEM's.<br>Monitoring data does not need to be reduced for reporting purposes because subpart N requires measurement once/day.  |
| 63.8(g) .....                | No .....             |  |
| 63.9(a) .....                | Yes                  | § 63.343(a)(3) of subpart N requires area sources to comply with major source provisions if an increase in HAP emissions causes them to become major sources.  |
| 63.9(b)(1)(i)–(ii) .....     | No .....             |  |

TABLE 1 TO SUBPART N OF PART 63—GENERAL PROVISIONS APPLICABILITY TO SUBPART N—Continued

| General provisions reference | Applies to subpart N | Comment   |
|------------------------------|----------------------|---|
| 63.9(b)(1)(iii)              | No                   | § 63.347(c)(2) of subpart N specifies initial notification requirements for new or reconstructed affected sources.  |
| 63.9(b)(2)                   | No                   | § 63.347(c)(1) of subpart N specifies the information to be contained in the initial notification.  |
| 63.9(b)(3)                   | No                   | § 63.347(c)(2) of subpart N specifies notification requirements for new or reconstructed sources that are not major affected sources.   |
| 63.9(b)(4)                   | No                   | This paragraph only references “§ 63.6(i)(4) through § 63.6(i)(6)” for compliance extension provisions. But, § 63.343(a)(6) of subpart N also contains provisions for requesting a compliance extension. Subpart N provides a different timeframe for submitting the request than § 63.6(i)(4). |
| 63.9(b)(5)                   | No                   |   |
| 63.9(c)                      | Yes                  |   |
| 63.9(d)                      | Yes                  | This paragraph only references “the notification dates established in paragraph (g) of this section.” But, § 63.347 of subpart N also contains notification dates.  |
| 63.9(e)                      | No                   | Notification of performance test is required by § 63.347(d) of subpart N.   |
| 63.9(f)                      | No                   | Subpart N does not require a performance evaluation or relative accuracy test for monitoring devices.   |
| 63.9(g)                      | No                   |   |
| 63.9(h)(1)–(3)               | No                   | § 63.347(e) of subpart N specifies information to be contained in the notification of compliance status and the timeframe for submitting this information.  |
| 63.9(h)(5)                   | No                   | Similar language has been incorporated into § 63.347(e)(2)(iii) of subpart N.   |
| 63.9(h)(6)                   | Yes                  |   |
| 63.9(i)                      | Yes                  |   |
| 63.9(j)                      | Yes                  |   |
| 63.10(a)                     | Yes                  |   |
| 63.10(b)(1)                  | Yes                  |   |
| 63.10(b)(2)                  | No                   | § 63.346(b) of subpart N specifies the records that must be maintained.   |
| 63.10(b)(3)                  | No                   | Subpart N applies to major and area sources.  |
| 63.10(c)                     | No                   | Applicable requirements of § 63.10(c) have been incorporated into § 63.346(b) of subpart N.   |
| 63.10(d)(1)                  | Yes                  |   |
| 63.10(d)(2)                  | No                   |   |
| 63.10(d)(3)                  | No                   | Subpart N does not contain opacity or visible emissions standards.  |
| 63.10(d)(4)                  | Yes                  | § 63.342(f)(3)(iv) and § 63.347(g)(3) of subpart N specify reporting associated with malfunctions.  |
| 63.10(d)(5)                  | No                   |   |
| 63.10(e)                     | No                   |   |
| 63.10(f)                     | Yes                  | § 63.347(g) and (h) of subpart N specify the frequency of periodic reports of monitoring data used to establish compliance. Applicable requirements of § 63.10(e) have been incorporated into § 63.347(g) and (h).  |
| 63.11                        | No                   |   |
| 63.12–63.15                  | Yes                  |   |

[60 FR 4963, Jan. 25, 1995, as amended at 61 FR 27787, June 3, 1996]

**Subpart O—Ethylene Oxide Emissions Standards for Sterilization Facilities**

SOURCE: 59 FR 62589, Dec. 6, 1994, unless otherwise noted.

**§ 63.360 Applicability.**

(a) All sterilization sources using 1 ton (see definition) in sterilization or fumigation operations are subject to the emissions standards in § 63.362, except as specified in paragraphs (b) through (e) of this section. Owners or operators of sources using 1 ton (see definition) subject to the provisions of this subpart must comply with the requirements of subpart A, of this part

according to the applicability of subpart A of this part to such sources in Table 1 of this section.

TABLE 1 OF SECTION 63.360— GENERAL PROVISIONS APPLICABILITY TO SUBPART O

| Reference                | Applies to sources using 10 tons in subpart O <sup>a</sup> | Applies to sources using 1 to 10 tons in subpart O <sup>a</sup> | Comment  |
|--------------------------|--|---|--|
| 63.1(a)(1) .....         |  | Yes   | Additional terms defined in § 63.361; when overlap between subparts A and O occurs, subpart O takes precedence.                                |
| 63.1(a)(2) .....         |  | Yes   |  |
| 63.1(a)(3) .....         |  | Yes   |  |
| 63.1(a)(4) .....         |  | Yes   | Subpart O clarifies the applicability of each paragraph in subpart A to sources subject to subpart O.  |
| 63.1(a)(5) .....         |  | No  | Reserved.  |
| 63.1(a)(6) .....         |  | Yes   |  |
| 63.1(a)(7) .....         |  | Yes   |  |
| 63.1.1(a)(8) .....       |  | Yes   |  |
| 63.1(a)(9) .....         |  | No  | Reserved.  |
| 63.1(a)(10) .....        |  | Yes   |  |
| 63.1(a)(11) .....        |  | Yes   | § 63.366(a) of subpart O also allows report submissions via fax and on electronic media.   |
| 63.1(a)(12)–(14) .....   |  | Yes   |  |
| 63.1(b)(1)–(2) .....     |  | Yes   |  |
| 63.1(b)(3) .....         |  | No  | § 63.367 clarifies the applicability of recordkeeping requirements for sources that determine they are not subject to the emissions standards. |
| 63.1(c)(1) .....         |  | Yes   | Subpart O clarifies the applicability of each paragraph in subpart A to sources subject to subpart O in this table.                            |
| 63.1(c)(2) .....         |  | Yes   | Subpart O also specifies which sources are required to obtain a Title V permit in § 63.360.  |
| 63.1(c)(3) .....         |  | No  | Reserved.  |
| 63.1(c)(4) .....         |  | Yes   |  |
| 63.1(c)(5) .....         |  | No  | § 63.360 specifies applicability.  |
| 63.1(d) .....            |  | No  | Reserved.  |
| 63.1(e) .....            |  | Yes   |  |
| 63.2 .....               |  | Yes   | Additional terms defined in § 63.361; when overlap between subparts A and O occurs, subpart O takes precedence.                                |
| 63.3 .....               |  | Yes   | Other units used in subpart O are defined in the text of subpart O.  |
| 63.4(a)(1)–(3) .....     |  | Yes   |  |
| 63.4(a)(4) .....         |  | No  | Reserved.  |
| 63.4(a)(5) .....         |  | Yes   |  |
| 63.4(b) .....            |  | Yes   |  |
| 63.4(c) .....            |  | Yes   |  |
| 63.5(a) .....            |  | No  | § 63.366(b)(1) contains applicability requirements for constructed or reconstructed sources.   |
| 63.5(b)(1) .....         | Yes .....  | No .....  |  |
| 63.5(b)(2) .....         |  | No  | Reserved.  |
| 63.5(b)(3) .....         |  | No  | See § 63.366(b)(2).  |
| 63.5(b)(4) .....         | Yes .....  | No .....  |  |
| 63.5(b)(5) .....         | Yes .....  | No .....  |  |
| 63.5(b)(6) .....         | Yes .....  | No .....  |  |
| 63.5(c) .....            |  | No  | Reserved.  |
| 63.5(d)(1)–(2) .....     |  | No  | See § 63.366(b)(3).  |
| 63.5(d)(3)–(4) .....     | Yes .....  | No .....  |  |
| 63.5(e) .....            | Yes .....  | No .....  |  |
| 63.5(f)(1) and (2) ..... |  | No  | See § 63.366(b)(4).  |
| 63.6(a)(1) .....         |  | Yes   |  |
| 63.6(a)(2) .....         |  | No  | § 63.360 specifies applicability.  |
| 63.6(b) and (c) .....    |  | No  | § 63.360(g) specifies compliance dates for sources.  |
| 63.6(d) .....            |  | No  | Reserved.  |

TABLE 1 OF SECTION 63.360— GENERAL PROVISIONS APPLICABILITY TO SUBPART O—Continued

| Reference                     | Applies to sources using 10 tons in subpart O <sup>a</sup> | Applies to sources using 1 to 10 tons in subpart O <sup>a</sup> | Comment  |
|-------------------------------|--|---|--|
| 63.6(e) .....                 |  | No  | Subpart O does not contain any operation and maintenance plan requirements.  |
| 63.6(f)(1) .....              |  | No  | § 63.362(b) specifies when the standards apply.  |
| 63.6(f)(2)(i) .....           |  | Yes   |  |
| 63.6(f)(2)(ii) .....          |  | No  | § 63.363 specifies parameters for determining compliance.  |
| 63.6(f)(2)(iii)-(iv) .....    |  | Yes   |  |
| 63.6(f)(2)(v) .....           |  | No  |  |
| 63.6(f)(3) .....              |  | Yes   |  |
| 63.6(g) .....                 |  | Yes   |  |
| 63.6(h) .....                 |  | No  | Subpart O does not contain any opacity or visible emission standards.  |
| 63.6(i)(1)-(14) .....         |  | Yes   |  |
| 63.6(i)(15) .....             |  | No  | Reserved   |
| 63.6(i)(16) .....             |  | Yes   |  |
| 63.6(j) .....                 |  | Yes   |  |
| 63.7(a)(1) .....              |  | Yes   |  |
| 63.7(a)(2) .....              |  | No  | § 63.365(a)(2) specifies performance test dates.   |
| 63.7(a)(3) .....              |  | Yes   |  |
| 63.7(b) .....                 |  | Yes   |  |
| 63.7(c) .....                 | Yes .....  | No.   |  |
| 63.7(d) .....                 | Yes .....  | No.   |  |
| 63.7(e) .....                 |  | Yes   | § 63.365 also contains test methods specific to sources subject to the emissions standards.                          |
| 63.7(f) .....                 |  | Yes   |  |
| 63.7(g)(1) .....              |  | Yes   |  |
| 63.7(g)(2) .....              |  | No  | Reserved   |
| 63.7(g)(3) .....              |  | Yes   |  |
| 63.7(h) .....                 |  | Yes   |  |
| 63.8(a)(1) .....              |  | Yes   |  |
| 63.8(a)(2) .....              |  | Yes   |  |
| 63.8(a)(3) .....              |  | No  | Reserved   |
| 63.8(a)(4) .....              |  | Yes   |  |
| 63.8(b)(1) .....              |  | Yes   |  |
| 63.8(b)(2) .....              |  | Yes   |  |
| 63.8(b)(3) .....              |  | No  |  |
| 63.8(c)(1) (i) and (ii) ..... |  | No  | A startup, shutdown, and malfunction plan is not required for these standards.                                       |
| 63.8(c)(1)(iii) .....         |  | Yes   |  |
| 63.8(c)(2)-(3) .....          |  | Yes   |  |
| 63.8(c)(4)-(5) .....          |  | No  | Frequency of monitoring measurements is provided in § 63.364; opacity monitors are not required for these standards. |
| 63.8(c)(6) .....              |  | No  | Performance specifications for gas chromatographs and temperature monitors are contained in § 63.365.                |
| 63.8(c)(7)(i)(A)-(B) .....    |  | No  | Performance specifications for gas chromatographs and temperature monitors are contained in § 63.365.                |
| 63.8(c)(7)(i)(C) .....        |  | No  | Opacity monitors are not required for these standards.   |
| 63.8(c)(7)(ii) .....          |  | No  | Performance specifications for gas chromatographs and temperature monitors are contained in § 63.365.                |
| 63.8(c)(8) .....              |  | No  |  |
| 63.8(d) .....                 | Yes .....  | No.   |  |
| 63.8(e)(1) .....              |  | Yes   |  |
| 63.8(e)(2) .....              |  | Yes   |  |
| 63.8(e)(3) .....              | Yes .....  | No.   |  |
| 63.8(e)(4) .....              |  | Yes   |  |
| 63.8(e)(5)(i) .....           |  | Yes   |  |
| 63.8(e)(5)(ii) .....          |  | No  | Opacity monitors are not required for these standards.   |
| 63.8(f)(1)-(5) .....          |  | Yes   |  |

TABLE 1 OF SECTION 63.360— GENERAL PROVISIONS APPLICABILITY TO SUBPART O—Continued

| Reference                   | Applies to sources using 10 tons in subpart O <sup>a</sup> | Applies to sources using 1 to 10 tons in subpart O <sup>a</sup> | Comment  |
|-----------------------------|--|---|--|
| 63.8(f)(6) .....            |  | No  |  |
| 63.8(g)(1) .....            |  | Yes   |  |
| 63.8(g)(2) .....            |  | No  |  |
| 63.8(g)(3)–(5) .....        |  | Yes   |  |
| 63.9(a) .....               |  | Yes   |  |
| 63.9(b)(1)–(i) .....        |  | Yes   |  |
| 63.9(b)(1)(ii)–(iii) .....  |  | No  | § 63.366(c)(1)(i) contains language for sources that increase usage such that the source becomes subject to the emissions standards. |
| 63.9(b)(2)–(3) .....        |  | Yes   | § 63.366(c)(3) contains additional information to be included in the initial report for existing and new sources.                    |
| 63.9(b)(4)–(5) .....        |  | No  | § 63.366(c)(1)(ii) and (iii) contains requirements for new or reconstructed sources subject to the emissions standards.              |
| 63.9(c) .....               |  | Yes   |  |
| 63.9(d) .....               |  | No  |  |
| 63.9(e) .....               |  | Yes   |  |
| 63.9(f) .....               |  | No  | Opacity monitors are not required for these standards.   |
| 63.9(g)(1) .....            |  | Yes   |  |
| 63.9(g)(2)–(3) .....        |  | No  | Opacity monitors and relative accuracy testing are not required for these standards.   |
| 63.9(h)(1)–(3) .....        |  | Yes   |  |
| 63.9(h)(4) .....            |  | No  | Reserved.  |
| 63.9(h)(5) .....            |  | No  | § 63.366(c)(2) instructs sources to submit actual data.  |
| 63.9(h)(6) .....            |  | Yes   |  |
| 63.9(i) .....               |  | Yes   |  |
| 63.9(j) .....               |  | Yes   |  |
| 63.10(a) .....              |  | Yes   |  |
| 63.10(b)(1) .....           |  | Yes   |  |
| 63.10(b)(2)(i) .....        |  | No  | Not applicable due to batch nature of the industry.  |
| 63.10(b)(2)(ii) .....       |  | Yes   |  |
| 63.10(b)(2)(iii) .....      |  | No  |  |
| 63.10(b)(2)(iv)–(v) .....   |  | No  | A startup, shutdown, and malfunction plan is not required for these standards.   |
| 63.10(b)(2)(vi)–(xii) ..... |  | Yes   |  |
| 63.10(b)(2)(xiii) .....     |  | No  |  |
| 63.10(b)(2)(xiv) .....      |  | Yes   |  |
| 63.10(b)(3) .....           |  | No  | § 63.367 (b) and (c) contains applicability determination requirements.  |
| 63.10(c)(1) .....           |  | Yes   |  |
| 63.10(c)(2)–(4) .....       |  | No  | Reserved.  |
| 63.10(c)(5) .....           |  | Yes   |  |
| 63.10(c)(6) .....           |  | No  |  |
| 63.10(c)(7) .....           |  | No  | Not applicable due to batch nature of the industry.  |
| 63.10(c)(8) .....           |  | Yes   |  |
| 63.10(c)(9) .....           |  | No  | Reserved.  |
| 63.10(c)(10)–(13) .....     |  | Yes   |  |
| 63.10(c)(14) .....          | Yes .....  | No .....  |  |
| 63.10(c)(15) .....          |  | No  | A startup, shutdown, and malfunction plan is not required for these standards.   |
| 63.10(d)(1) .....           |  | Yes   |  |
| 63.10(d)(2) .....           |  | Yes   |  |
| 63.10(d)(3) .....           |  | No  | Subpart O does not contain opacity or visible emissions standards.   |
| 63.10(d)(4) .....           |  | Yes   |  |
| 63.10(d)(5) .....           |  | No  | A startup, shutdown, and malfunction plan is not required for these standards.   |
| 63.10(e)(1) .....           |  | Yes   |  |
| 63.10(e)(2)(i) .....        |  | Yes   |  |

TABLE 1 OF SECTION 63.360— GENERAL PROVISIONS APPLICABILITY TO SUBPART O—Continued

| Reference                    | Applies to sources using 10 tons in subpart O <sup>a</sup> | Applies to sources using 1 to 10 tons in subpart O <sup>a</sup> | Comment   |
|------------------------------|--|---|---|
| 63.10(e)(2)(ii) .....        |  | No  | Opacity monitors are not required for these standards.  |
| 63.10(e)(3)(i)–(iv) .....    |  | Yes   |   |
| 63.10(e)(3)(v) .....         |  | No  |   |
|                              |  |   | § 63.366(a)(3) specifies contents and submittal dates for excess emissions and monitoring system performance reports. |
| 63.10(e)(3)(vi)–(viii) ..... |  | Yes   | Opacity monitors are not required for these standards.  |
| 63.10(e)(4) .....            |  | No  |   |
| 63.10(f) .....               |  | Yes   |   |
| 63.11 .....                  |  | Yes   |   |
| 63.12–63.15 .....            |  | Yes   |   |

<sup>a</sup> See definition.

(b) Sterilization sources using less than 1 ton (see definition) are not subject to the emissions standards in § 63.362. The recordkeeping requirements of § 63.367(c) apply.

(c) This subpart does not apply to beehive fumigators.

(d) This subpart does not apply to research or laboratory facilities as defined in section 112(c)(7) of title III of the Clean Air Act Amendment of 1990.

(e) This subpart does not apply to ethylene oxide sterilization operations at stationary sources such as hospitals, doctors offices, clinics, or other facilities whose primary purpose is to provide medical services to humans or animals.

(f) The owner or operator of a source, subject to the provisions of the title 40, chapter I, part 63 subpart O, using 1 ton (see definition) is subject to title V permitting requirements. These affected sources, if not major or located at major sources as defined under 40 CFR 70.2, may be deferred by the applicable title V permitting authority from title V permitting requirements for 5 years after the date on which the EPA first approves a part 70 program (i.e., until December 9, 1999). All sources receiving deferrals shall submit title V permit applications within 12 months of such date (by December 9, 2000). All sources receiving deferrals still must meet compliance schedule as stated in this § 63.360.

(g) The owner or operator shall comply with the provisions of this subpart as follows:

(1) All sources subject to the emissions standards in § 63.362 with an initial startup date before December 8, 1997, no later than 3 years after the effective date.

(2) All sources subject to the emissions standards in § 63.362 with an initial startup date after December 8, 1997, immediately upon initial startup of the source.

(3) All sources using less than 10 tons that increase their ethylene oxide usage after December 8, 1997 such that any vent becomes subject to the emissions standards in § 63.362, immediately upon becoming subject to the emissions standards.

[59 FR 62589, Dec. 6, 1994, as amended at 61 FR 27788, June 3, 1996]

**§ 63.361 Definitions.**

Terms and nomenclature used in this subpart are defined in the Clean Air Act (the Act) as amended in 1990, §§ 63.2 and 63.3 of subpart A of this part, or in this section. For the purposes of subpart O, if the same term is defined in subpart A and in this section, it shall have the meaning given in this section.

*Aeration room* means any vessel or room that is used to facilitate off-gassing of ethylene oxide at a sterilization facility.

*Aeration room vent* means the point(s) through which the evacuation of ethylene oxide-laden air from an aeration room occurs.

*Baseline temperature* means any temperature at the outlet point of a catalytic oxidation unit control device or

at the exhaust point from the combustion chamber for a thermal oxidation unit control device established during the performance test when the respective unit achieves at least 99-percent control of ethylene oxide emissions.

*Chamber exhaust vent* means the point(s) through which ethylene oxide-laden air is removed from the sterilization chamber during chamber unloading following the completion of sterilization and associated air washes.

*Compliance date* means the date by which a source subject to the emissions standards in §63.362 is required to be in compliance with the standard.

*Effective date* means the date of promulgation in the FEDERAL REGISTER notice.

*Initial startup date* means the date when a source subject to the emissions standards in §63.362 first begins operation of a sterilization process.

*Manifolding emissions* means combining ethylene oxide emissions from two or more different vent types for the purpose of controlling these emissions with a single control device.

*Maximum ethylene glycol concentration* means any concentration of ethylene glycol in the scrubber liquor of an acid-water scrubber control device established during a performance test when the scrubber achieves at least 99-percent control of ethylene oxide emissions.

*Maximum liquor tank level* means any level of scrubber liquor in the acid-water scrubber liquor recirculation tank established during a performance test when the scrubber achieves at least 99-percent control of ethylene oxide emissions.

*Oxidation temperature* means the temperature at the outlet point of a catalytic oxidation unit control device or at the exhaust point from the combustion chamber for a thermal oxidation unit control device.

*Parametric monitoring* means monitoring of a specific operating parameter of the control device that demonstrates that the control device is operating under conditions that meet the standard.

*Source(s) using less than 1 ton* means source(s) using less than 907 kg (1 ton) of ethylene oxide within all consecu-

tive 12-month periods after December 6, 1996.

*Source(s) using 1 ton* means source(s) using 907 kg (1 ton) or more of ethylene oxide within any consecutive 12-month period after December 6, 1996.

*Source(s) using 1 to 10 tons* means source(s) using 907 kg (1 ton) or more of ethylene oxide in any consecutive 12-month period but less than 9,070 kg (10 tons) of ethylene oxide in all consecutive 12-month periods after December 6, 1996.

*Source(s) using less than 10 tons* means source(s) using less than 9,070 kg (10 tons) of ethylene oxide in all consecutive 12-month periods after December 6, 1996.

*Source(s) using 10 tons* means source(s) using 9,070 kg (10 tons) or more of ethylene oxide in any consecutive 12-month period after December 6, 1996.

*Sterilization chamber* means any enclosed vessel or room that is filled with ethylene oxide gas, or an ethylene oxide/inert gas mixture, for the purpose of sterilizing and/or fumigating at a sterilization facility.

*Sterilization chamber vent* means the point (prior to the vacuum pump) through which the evacuation of ethylene oxide from the sterilization chamber occurs following sterilization or fumigation, including any subsequent air washes.

*Sterilization facility* means any stationary source where ethylene oxide is used in the sterilization or fumigation of materials.

*Sterilization operation* means any time when ethylene oxide is removed from the sterilization chamber through the sterilization chamber vent or the chamber exhaust vent or when ethylene oxide is removed from the aeration room through the aeration room vent.

#### § 63.362 Standards.

(a) Each owner or operator of a source subject to the provisions of this subpart shall comply with these requirements on and after the compliance date specified in §63.360(g). The standards of this section are summarized in Table 1 of this section.

TABLE 1 OF SECTION 63.362.—STANDARDS FOR ETHYLENE OXIDE COMMERCIAL STERILIZERS AND FUMIGATORS

| Existing and new sources | Source type                                       | Sterilization chamber vent  | Aeration room vent  | Chamber exhaust vent   |
|--------------------------|---|---|---|--|
| Source size .....        | <907 kg (<1 ton) .....                            | No controls required; minimal recordkeeping requirements apply (see § 63.367(c)). | No control .....  | Maximum chamber concentration limit of 5,300 ppm prior to activation of the chamber exhaust <sup>1</sup> (see § 63.362(e)(2)). |
|                          | ≥907 kg and <9,070 kg (≥1 ton and <10 tons) ..... | 99% emission reduction (see § 63.362(c)).   | 1 ppm maximum outlet concentration or 99% emission reduction (see § 63.362(d)). | Manifold to a control device used to comply with § 63.362 (c) or (d) or 99 percent emission reduction (see § 63.362(e)(1)).    |
|                          | ≥9,070 kg (≥10 tons) .....                        | 99% emission reduction (see § 63.362(c)).   |   |  |

<sup>1</sup> Affected sources may show compliance by manifolded emissions to a control device used to comply with § 63.362 (c) or (d) by reducing emissions by at least 99 percent.

(b) *Applicability of emission limits.* The emission limitations of paragraphs (c), (d), and (e) of this section apply during sterilization operation. The emission limitations do not apply during periods of malfunction.

(c) *Sterilization chamber vent at sources using 1 ton.* Each owner or operator of a sterilization source using 1 ton shall reduce ethylene oxide emissions to the atmosphere by at least 99 percent from each sterilization chamber vent.

(d) *Aeration room vent at sources using 10 tons.* Each owner or operator of a sterilization source using 10 tons shall reduce ethylene oxide emissions to the atmosphere from each aeration room vent to a maximum concentration of 1 ppmv or by at least 99 percent, whichever is less stringent, from each aeration room vent.

(e) (1) *Chamber exhaust vent at sources using 10 tons.* Each owner or operator of a sterilization source using 10 tons shall either reduce ethylene oxide emissions to the atmosphere by manifolding emissions from each chamber exhaust vent to a control device used to comply with paragraphs (c) or (d) of this section or shall reduce ethylene oxide emissions by at least 99 percent from each chamber exhaust vent (without manifolding).

(2) *Chamber exhaust vent at sources using 1 to 10 tons.* Each owner or operator of a sterilization source using 1 to 10 tons shall limit ethylene oxide emissions from the chamber exhaust vent to the atmosphere to a maximum concentration of 5,300 ppmv from each chamber exhaust vent. If the owner or operator chooses to limit emissions to 5,300 ppmv concentration through the use of a control device, the owner or operator may choose either to manifold ethylene oxide emissions from each chamber exhaust vent to a control device used to comply with paragraph (c) of this section or to reduce ethylene oxide emissions by at least 99 percent (without manifolding).

**§ 63.363 Compliance and performance testing.**

(a) (1) The owner or operator of a source subject to emissions standards in § 63.362 shall conduct an initial performance test using the procedures listed in § 63.7 of subpart A of this part

according to the applicability in Table 1 of § 63.360, the procedures listed in this section, and the test methods listed in § 63.365.

(2) The owner or operator of all sources subject to these emissions standards shall complete the performance test within 180 days after the compliance date for the specific source as determined in § 63.360(g).

(b) The following procedures shall be used to determine compliance with the emission limits under § 63.362(c), the sterilization chamber vent standard:

(1) During the performance test required in paragraph (a) of this section, the owner or operator shall determine the efficiency of control devices used to comply with § 63.362(c) using the test methods and procedures in § 63.365(b)(1). The owner or operator shall also determine the following:

(i) For facilities with acid-water scrubbers, the owner or operator shall establish as a site-specific operating parameter during the test methods and procedures in § 63.365(b)(1) either:

(A) The maximum ethylene glycol concentration using the procedures described in § 63.365(e)(1); or

(B) The maximum liquor tank level using the procedures described in § 63.365(e)(2).

(ii) For facilities with catalytic oxidizers or thermal oxidizers, the owner or operator shall establish as a site-specific operating parameter the baseline temperature during the performance test in § 63.365(b)(2) using the procedures described in § 63.365(f)(1).

(2) Following the date on which the initial performance test is completed, the owner or operator shall comply with one of the following provisions:

(i) For facilities with acid-water scrubbers, operation of the facility with an ethylene glycol concentration in the scrubber liquor in excess of the maximum ethylene glycol concentration or the liquor tank level in excess of the maximum liquor tank level shall constitute a violation of the sterilization chamber vent standard.

(ii) For facilities with catalytic oxidizers or thermal oxidizers, operation of the facility with the oxidation temperature, averaged over three cycles, more than 5.6°C (10°F) below the baseline temperature shall constitute a

violation of the sterilization chamber vent standard.

(c) The following procedures shall be used to determine compliance with the emission limits under § 63.362(d), the aeration room vent standard:

(1) During the performance test required in paragraph (a) of this section, the owner or operator shall determine either:

(i) The concentration of ethylene oxide emitted from the aeration room into the atmosphere (after any control device used to comply with § 63.362(d)) using the methods in § 63.365(c)(1); or

(ii) The efficiency of the control device used to comply with § 63.362(d) using the test methods and procedures in § 63.365(d)(1).

(2) For facilities seeking to comply with paragraph (c)(1)(ii) of this section with catalytic oxidizers or thermal oxidizers, the owner or operator must also establish as a site-specific operating parameter the baseline temperature using the procedures described in § 63.365(f)(2).

(3) Following the date on which the initial performance test is completed, the owner or operator of a facility shall comply with one of the following provisions:

(i) For facilities continuously measuring the ethylene oxide concentration emitted from the aeration room (after any control device), operation of the facility with a 3-hour average ethylene oxide concentration in excess of the 1 ppmv ethylene oxide concentration limit shall constitute a violation of the aeration room vent standard.

(ii) For facilities with catalytic oxidizers or thermal oxidizers, operation of the facility with the oxidation temperature, averaged over three hours, more than 5.6°C (10°F) below the baseline temperature shall constitute a violation of the aeration room vent standard.

(d) The following procedures shall be used to determine compliance with the emission limits under § 63.362(e)(1), the chamber exhaust vent standard for sources using 10 tons:

(1) For facilities manifolding emissions from the chamber exhaust vent to a control device controlling emissions from the sterilization chamber vent and/or the aeration room vent, the

owner or operator shall comply with the appropriate compliance provisions for that vent type and control device (see paragraphs (b) and (c) of this section).

(2) For facilities not manifolding emissions from the chamber exhaust vent (to a control device used to comply with § 63.362(c) or (d)), the owner or operator shall comply with the following:

(i) During the performance test required in paragraph (a) of this section, the owner or operator shall determine the efficiency of control devices used to comply with § 63.362(e)(1) using the test methods and procedures in § 63.365(d)(2) as well as the following:

(A) For facilities with acid-water scrubbers, the owner or operator shall establish as a site-specific operating parameter either:

(1) The maximum ethylene glycol concentration using the procedures described in § 63.365(e)(1); or

(2) The maximum liquor tank level using the procedures described in § 63.365(e)(2).

(B) For facilities with catalytic oxidizers or thermal oxidizers, the owner or operator shall establish as a site-specific operating parameter the baseline temperature using the procedures described in § 63.365(f)(3).

(ii) Following the date on which the initial performance test is completed, the owner or operator of a facility shall comply with one of the following provisions:

(A) For facilities with acid-water scrubbers, operation of the facility with an ethylene glycol concentration in the scrubber liquor in excess of the maximum ethylene glycol concentration or the liquor tank level in excess of the maximum liquor tank level shall constitute a violation of the chamber exhaust vent standard for sources using 10 tons.

(B) For facilities with catalytic oxidizers or thermal oxidizers, operation of the facility with the oxidation temperature, averaged over the cycle, more than 5.6°C (10°F) below the baseline temperature shall constitute a violation of the chamber exhaust vent standard for sources using 10 tons.

(e) The following procedures shall be used to determine compliance with the

emission limits under § 63.362(e)(2), the chamber exhaust vent standard for sources using 1 to 10 tons:

(1) For facilities manifolding emissions from the chamber exhaust vent to a control device controlling emissions from the sterilization chamber vent, the owner or operator shall comply with the appropriate compliance provisions for the appropriate control technology (see paragraph (b) of this section).

(2) For facilities not manifolding emissions from the chamber exhaust vent (to a control device used to comply with § 63.362(c)), during the performance test required in paragraph (a) of this section, the owner or operator shall either:

(i) Determine the concentration of ethylene oxide in the sterilization chamber immediately prior to the operation of the chamber exhaust using the test methods and procedures in § 63.365(c)(2); or

(ii) Determine the efficiency of control devices used to comply with § 63.362(e)(2) using the test methods and procedures in § 63.365(d)(2) as well as the following:

(A) For facilities with acid-water scrubbers, the owner or operator shall establish as a site-specific operating parameter either:

(1) The maximum ethylene glycol concentration using the procedures described in § 63.365(e)(1); or

(2) The maximum liquor tank level using the procedures described in § 63.365(e)(2).

(B) For facilities with catalytic oxidizers or thermal oxidizers, the owner or operator shall establish as a site-specific operating parameter the baseline temperature using the procedures described in § 63.365(f)(3).

(3) Following the date on which the initial performance test is completed, the owner or operator of a facility shall comply with one of the following provisions:

(i) For facilities determining the ethylene oxide concentration, operation of the facility with the ethylene oxide concentration in the sterilization chamber (immediately prior to activation of the chamber exhaust) in excess of the 5,300 ppmv ethylene oxide concentration standard shall constitute a

violation of the chamber exhaust vent standard for sources using 1 to 10 tons.

(ii) Following the date on which the initial performance test is completed, the owner or operator of a facility shall comply with one of the following provisions:

(A) For facilities with acid-water scrubbers, operation of the facility with an ethylene glycol concentration in the scrubber liquor in excess of the maximum ethylene glycol concentration or the liquor tank level in excess of the maximum liquor tank level shall constitute a violation of the chamber exhaust vent standard for sources using 1 to 10 tons.

(B) For facilities with catalytic oxidizers or thermal oxidizers, operation of the facility with the oxidation temperature, averaged over the cycle, more than 5.6°C (10°F) below the baseline temperature shall constitute a violation of the chamber exhaust vent standard for sources using 1 to 10 tons.

(f) For facilities complying with the emissions limits under § 63.362 with a control technology other than acid-water scrubbers or catalytic or thermal oxidizers:

(1) The owner or operator of the facility shall provide to the Administrator information describing the design and operation of the air pollution control system including recommendations for the operating parameters to be monitored to indicated proper operation and maintenance of the air pollution control system. Based on this information, the Administrator will determine the site-specific operating parameter(s) to be established during the performance test. During the performance test required in paragraph (a) of this section using the methods approved in § 63.365(g), the owner or operator shall determine the site-specific operating parameter(s) approved by the Administrator.

(2) Operation of the facility in a manner that exceeds a site-specific parameter established as a maximum requirement or falls below a site-specific parameter established as a minimum requirement (depending on the parameters monitored) shall constitute a violation of the applicable emissions standard under § 63.362.

**§ 63.364 Monitoring requirements.**

(a)(1) The owner or operator of a source subject to emissions standards in § 63.362 shall comply with the monitoring requirements in § 63.8 of subpart A of this part, according to the applicability in Table 1 of § 63.360, and in this section.

(2) Each owner or operator of an ethylene oxide sterilization facility subject to these emissions standards shall monitor the parameters specified in this section. All monitoring equipment shall be installed such that representative measurements of emissions or process parameters from the source are obtained. For monitoring equipment purchased from a vendor, verification of the operational status of the monitoring equipment shall include completion of the manufacturer's written specifications or recommendations for installation, operation, and calibration of the system.

(b) For sterilization facilities complying with § 63.363 (b), (d), or (e) through the use of an acid-water scrubber, the owner or operator shall either:

(1) Sample the scrubber liquor and analyze and record once per week the ethylene glycol concentration of the scrubber liquor using the test methods and procedures in § 63.365(e)(1). Monitoring is required during a week only if the scrubber unit has been operated; or

(2) Measure and record once per week the level of the scrubber liquor in the recirculation tank. The owner or operator shall install, maintain, and use a liquid level indicator to measure the scrubber liquor tank level (i.e., a marker on the tank wall, a dipstick, a magnetic indicator, etc.).

(c) For sterilization facilities complying with § 63.363(b), (c), (d), or (e) through the use of catalytic oxidation or thermal oxidation, the owner or operator shall continuously monitor and record the oxidation temperature at the outlet to the catalyst bed or at the exhaust point from the thermal combustion chamber using the temperature monitor described in paragraph (c)(4) of this section.

(1) For the sterilization chamber vent, a data acquisition system for the temperature monitor shall compute and record an average oxidation tem-

perature over the length of the cycle (based on the length of the cycle used during the performance test in § 63.365(b)(2)) and a three-cycle block average every third cycle.

(2) For the aeration room vent, a data acquisition system for the temperature monitor shall compute and record an average oxidation temperature each hour and a 3-hour block average every third hour.

(3) For the chamber exhaust vent, a data acquisition system for the temperature monitor shall compute and record an average oxidation temperature over the length of the cycle (based on the length of the cycle used during the performance test in § 63.365(d)(2)).

(4) The owner or operator shall install, calibrate, operate, and maintain a temperature monitor accurate to within  $\pm 5.6^{\circ}\text{C}$  ( $\pm 10^{\circ}\text{F}$ ) to measure the oxidation temperature. The owner or operator shall verify the accuracy of the temperature monitor twice each calendar year with a reference temperature monitor (traceable to National Institute of Standards and Technology (NIST) standards or an independent temperature measurement device dedicated for this purpose). During accuracy checking, the probe of the reference device shall be at the same location as that of the temperature monitor being tested.

(d) For sterilization facilities complying with § 63.363(b), (c), (d), or (e) through the use of a control device other than acid-water scrubbers or catalytic or thermal oxidizers, the owner or operator shall monitor the parameters as approved by the Administrator using the methods and procedures in § 63.365(g).

(e) For sterilization facilities complying with § 63.363(c)(3)(i) or (e)(2)(i) through the use of direct measurement of ethylene oxide concentration, the owner or operator shall follow either paragraph (e)(1) or (2) of this section:

(1) Measure and record once per hour the ethylene oxide concentration at the outlet to the atmosphere from the aeration room vent after any control device according to the procedures specified in § 63.365(c)(1). The owner or operator shall compute and record a 3-hour average every third hour. The

owner or operator will install, calibrate, operate, and maintain a gas chromatograph consistent with the requirements of performance specification (PS) 9 in 40 CFR part 60, Appendix B, to measure ethylene oxide. The daily calibration requirements of section 7.2 of PS 9 are required only on days when ethylene oxide emissions are vented to the control device from the aeration room vent.

(2) Measure and record the ethylene oxide concentration in the sterilization chamber immediately before the chamber exhaust is activated according to the procedures specified in §63.365(c)(2). The owner or operator shall install, calibrate, operate, and maintain a gas chromatograph consistent with the requirements of PS 9 to measure ethylene oxide concentration. The daily calibration requirements of section 7.2 of PS 9 are required only on days when the chamber exhaust is activated.

(f) For sterilization facilities complying with §63.363(d)(1) or (e)(1) by manifolded emissions from the chamber exhaust vent to a control device controlling emissions from another vent type, the owner or operator shall monitor the control device to which emissions from the chamber exhaust vent are manifolded using the appropriate monitoring requirements in paragraphs (a) through (e) of this section and record the monitoring data.

#### §63.365 Test methods and procedures.

(a) *Performance testing.* The owner or operator of a source subject to the emissions standards in §63.362 shall comply with the performance testing requirements in §63.7 of subpart A of this part, according to the applicability in Table 1 of §63.360, and in this section.

(b) *Efficiency at the sterilization chamber vent.* The following procedures shall be used to determine the efficiency of all types of control devices used to comply with §63.362(c), sterilization chamber vent standard.

(1) *First evacuation of the sterilization chamber.* This procedure shall be performed on an empty sterilizer for the duration of the first evacuation under normal operating conditions (i.e., sterilization cycle pressure and temperature) and charging a typical amount of

ethylene oxide to the sterilization chamber.

(i) The amount of ethylene oxide loaded into the sterilizer ( $W_c$ ) shall be determined by either:

(A) Weighing the ethylene oxide gas cylinder(s) used to charge the sterilizer before and after charging. Record these weights to the nearest 45 g (0.1 lb). Multiply the total mass of gas charged by the weight percent ethylene oxide present in the gas.

(B) Installing calibrated rotameters at the sterilizer inlet and measuring flow rate and duration of sterilizer charge. Use the following equation to convert flow rate to weight of ethylene oxide:

$$W_c = F_v \times t \times \%EO_v \times \left( \frac{MW}{SV} \right)$$

where:

$W_c$ =weight of ethylene oxide charged, g (lb)

$F_v$ =volumetric flow rate, liters per minute (L/min) corrected to 20 °C and 101.325 kilopascals (kPa) (scf per minute (scfm) corrected to 68 °F and 1 atmosphere of pressure (atm)); the flowrate must be constant during time (t)

t=time, min

$\%EO_v$ =volume fraction ethylene oxide

SV=standard volume, 24.05 liters per mole (L/mole)=22.414 L/mole ideal gas law constant corrected to 20 °C and 101.325 kPa (385.32 scf per mole (scf/mole)=359 scf/mole ideal gas law constant corrected to 68 °F and 1 atm).

MW=molecular weight of ethylene oxide, 44.05 grams per gram-mole (g/g-mole) (44.05 pounds per pound-mole (lb/lb-mole)), or

(C) Calculating the mass based on the conditions of the chamber immediately after it has been charged using the following equation:

$$W_c = \frac{MW \times \%EO_v \times P \times V}{R \times T}$$

where:

P=chamber pressure, kPa (psia)

V=chamber volume, liters (L) (ft<sup>3</sup>)

R=gas constant, 8.313 L•kPa/g-mole•(10.73 psia•ft<sup>3</sup>/mole•R)

T=temperature, K (°R)

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NOTE: If the ethylene oxide concentration is in weight percent, use the following equation to calculate mole fraction:

$$\%EO_v = \frac{W_{EO}}{W_{EO} + \left( W_x \times \frac{MW}{MW_x} \right)}$$

where:

$W_{EO}$ =weight percent of ethylene oxide  
 $W_x$ =weight percent of compound in the balance of the mixture  
 $MW_x$ =molecular weight of compound in the balance gas mixture

(ii) The residual mass of ethylene oxide in the sterilizer shall be determined by recording the chamber temperature, pressure, and volume after the completion of the first evacuation and using the following equation:

$$W_r = \frac{MW \times \%EO_v \times P \times V}{R \times T}$$

where:

$W_r$ =weight of ethylene oxide remaining in chamber (after the first evacuation), in g (lb)

(iii) Calculate the total mass of ethylene oxide at the inlet to the control device ( $W_i$ ) by subtracting the residual mass ( $W_r$ ) calculated in paragraph (b)(1)(ii) of this section from the charged weight ( $W_c$ ) calculated in paragraph (b)(1)(i) of this section.

(iv) The mass of ethylene oxide emitted from the control device outlet ( $W_o$ ) shall be calculated by continuously monitoring the flow rate and concentration using the following procedure.

(A) Measure the flow rate through the control device exhaust continuously during the first evacuation using the procedure found in 40 CFR part 60, appendix A, Test Methods 2, 2A, 2C, or 2D, as appropriate. (Method 2D (using orifice plates or Rootstypemeters) is recommended for measuring flow rates from sterilizer control devices.) Record the flow rate at 1-minute intervals throughout the test cycle, taking the first reading within 15 seconds after time zero. Time zero is defined as the moment when the pressure in the sterilizer is released. Correct the flow to standard conditions (20°C and 101.325 kPa (68°F and 1 atm)) and determine

the flow rate for the run as outlined in the test methods listed in paragraph (b) of this section.

(B) The Tedlar bag sampling procedure in section 7.1 of Test Method 18, 40 CFR part 60, appendix A (hereafter referred to as Method 18) shall be used to collect samples of exhaust gas throughout the test cycle. Follow the procedures in paragraph (b)(1)(iv)(B)(I) or (2) of this section.

(I) Continuously sample a slipstream of the control device outlet into a Tedlar bag by having a Tedlar bag attached to the slipstream for the entire duration of the run for an integrated bag sample. Whenever a Tedlar bag is full, a new bag must be reattached immediately. Note the time the bag is changed so the sample time and corresponding flow rates can be determined for each bag.

(i) Follow the procedures in section 6 of Method 18 and choose the appropriate column, analytical apparatus, and calibration gases for the analysis of the bag samples collected. The bag samples shall be analyzed within 8 hours of collection.

(ii) Prepare a graph of volumetric flow rate versus time corresponding to the period each bag was sampled. Integrate the area under the curve to determine the volume.

(iii) Calculate the mass of ethylene oxide for each bag by using the following equation:

$$W_b = C \times V \times \frac{MW}{SV} \times \frac{1}{10^6}$$

where:

$W_b$ =Mass of ethylene oxide for each bag, g (lb)

$C$ =concentration of ethylene oxide in ppmv

$V$ =volume of gas exiting the control device corresponding to each bag sample corrected to standard conditions, L (ft<sup>3</sup>)

$1/10^6$ =correction factor  $L_{EO}/10^6 L_{TOTAL GAS}$  (ft<sup>3</sup><sub>EO</sub>/10<sup>6</sup> ft<sup>3</sup><sub>TOTAL GAS</sub>)

Sum the mass corresponding to each bag ( $W_b$ ) used during the evacuation to calculate the total mass ( $W_o$ ).

(iv) Calculate the efficiency by the equation in paragraph (b)(1)(v) of this section.

(2) Collect a Tedlar bag (or equivalent collection device) sample at 1-minute intervals throughout the test cycle. (The first bag must be in place and sampling at  $t=15$  seconds. A fresh bag shall be in place and sampling exhaust gas at each 1-minute mark after time zero.) Collect enough sample gas in each bag to complete the analysis. Each bag sample shall be labeled with the sampling time and run number.

(i) Follow the procedures in section 6 of Method 18 and choose the appropriate column, analytical apparatus, and calibration gases for the analysis of the bag samples collected. The bag samples shall be analyzed within 8 hours of collection. (Syringe samples should be analyzed within 4 hours.)

(ii) Plot a concentration versus time curve using the average concentration, in ppmv, determined in each bag sample. Prepare another graph of volumetric flow rate versus time. Calculate the mass flow at each 1-minute interval point by selecting the concentration (C) and volumetric flow rate corrected to standard conditions ( $F_v$ ) at each 1-min point.

(iii) Use the following equation to determine the mass flow rate of ethylene oxide exiting the control device:

$$W_i = C \times F_v \times \frac{MW}{SV} \times \frac{1}{10^6}$$

where:

$W_i$  = mass flow rate of ethylene oxide

(iv) Plot a curve of mass flow rate versus time and integrate for total mass of ethylene oxide for the control device outlet ( $W_o$ ).

(v) Calculate efficiency by the equations in paragraphs (b)(1) (v) and (vi) of this section.

(C) As an alternative to paragraph (b)(1)(ii) of this section, the direct interface sampling and analysis procedure described in Method 18, section 7.2, may be used to continuously monitor ethylene oxide concentration at the inlet and outlet of the control device using a gas chromatograph with flame ionization detector (GC/FID) or photoionization detector (GC/PID). This procedure may be used only if a vent sample may be sampled and analyzed by the GC/FID or GC/PID at least once per minute.

(1) Follow the procedures in section 6 of Method 18 and choose the appropriate column, analytical apparatus, and calibration gases for the analysis of the sample.

(2) Follow the procedures in paragraphs (b)(1)(iv)(B)(2) (ii) through (v) of this section.

(v) Determine control device efficiency (% Eff) using the following equation:

$$\% \text{ Eff} = \frac{W_i - W_o}{W_i} \times 100$$

where:

% Eff = percent efficiency

$W_i$  = mass flow rate into the control device

$W_o$  = mass flow rate out of the control device

(vi) Repeat the procedures in paragraphs (b)(1) (i) through (v) of this section three times. The arithmetic average percent efficiency of the three runs shall determine the overall efficiency of the control device.

(2) *Last evacuation of the sterilization chamber.* One of the following procedures (paragraph (b)(2) (i) or (ii) of this section) shall be performed during the last evacuation of the sterilization chamber:

(i) The direct interface sampling and analysis procedure described in Method 18, section 7.2, may be used to continuously monitor ethylene oxide concentration at the inlet and outlet of the control device using a GC/FID or GC/PID; this procedure may be used only if a vent may be sampled and analyzed by the GC/FID or GC/PID once per minute for the duration of the last cycle.

(A) Follow the procedures in section 6 of Method 18 and choose the appropriate column, analytical apparatus, and calibration gases for the analysis of the sample.

(B) Follow the procedures in paragraphs (b)(1)(iv)(B)(2)(ii) through (iv) of this section.

(C) Determine control device efficiency (% Eff) using the following equation:

$$\% \text{Eff} = \frac{W_i - W_o}{W_i} \times 100$$

where:

% Eff = percent efficiency

$W_i$  = mass flow rate into the control device

$W_o$  = mass flow rate out of the control device

(D) Repeat the procedures in paragraphs (b)(2)(i) (A) through (C) of this section three times. The arithmetic average percent efficiency of the three runs shall determine the overall efficiency of the control device.

(ii) The Tedlar bag sampling procedure in section 7.1 of Method 18, may be used to collect samples of inlet and exhaust gas for the duration of the last cycle.

(A) Continuously sample a slipstream of the control device inlet and outlet into a Tedlar bag by having a Tedlar bag attached to the slipstream for the entire duration of the run for an integrated bag sample. Whenever a Tedlar bag is full, a new bag must be reattached immediately. Note the time the bag is changed so the sample time and corresponding flow rates can be determined for each bag.

(B) Follow the procedures in section 6 of Method 18 and choose the appropriate column, analytical apparatus, and calibration gases for the analysis of the bag samples collected. The bag samples shall be analyzed within 8 hours of collection.

(C) Follow the procedures in paragraphs (b)(1)(iv)(B)(2)(ii) through (iv) of this section.

(D) Determine control device efficiency (% Eff) using the equation in paragraph (b)(2)(i)(C) of this section.

(E) Repeat the procedures in paragraphs (b)(2)(ii)(A) through (D) of this section three times. The arithmetic average percent efficiency of the three runs shall determine the overall efficiency of the control device.

(iii) In the event that the outlet concentration from the control device is below the detection limit for ethylene oxide for determining the efficiency in paragraph (b)(2)(i)(C) or (ii)(D) of this section, the owner or operator shall assume the control device is meeting the standard in §63.362(e)(1) or (2) if the

inlet ethylene oxide concentration is at or below approximately 50 ppmv.

(c) *Concentration determination.* The following procedures shall be used to determine the ethylene oxide concentration as the monitored parameter established in §63.363(c) and (e) for aeration room emissions and chamber exhaust vents, respectively, and to continuously monitor the ethylene oxide concentration for aeration room vents as established in §63.364(e)(1) and to monitor the ethylene oxide concentration before activation of the chamber exhaust for chamber exhaust vents as established in §63.364(e)(2).

(1) *Aeration room vent.* For determining the ethylene oxide concentration for aeration room emissions, the procedures outlined in section 7.2 of Method 18 shall be used. Repeat these procedures three times. The arithmetic average of the ethylene oxide concentration of the three test runs shall determine the overall outlet ethylene oxide concentration from the control device. Compliance testing of gas chromatographs shall be performed using PS 9 in 40 CFR part 60.

(2) *Sterilization chamber prior to activation of the chamber exhaust.* For determining the ethylene oxide concentration in the sterilization chamber before activation of the chamber exhaust, the procedures outlined in sections 7.2 or 7.3 of Method 18 shall be used. The ethylene oxide concentration from one test run shall determine the outlet ethylene oxide concentration from the chamber exhaust vent. Compliance testing of gas chromatographs shall be performed using PS 9 in 40 CFR part 60.

(d) *Efficiency determination at the aeration room vent and at the chamber exhaust vent (not manifolded).* The following procedures shall be used to determine the efficiency of a control device used to comply with §63.362(d) or (e), the aeration room vent standard or the chamber exhaust vent standards (without manifolding the chamber exhaust vent emissions to another vent type):

(1) *Aeration room vent.* For determining the efficiency of aeration room vent control devices, either of the following test methods (paragraph (d)(1)(i) or (ii) of this section) may be used:

(i) the direct interface sampling and analysis procedure described in Method 18, section 7.2, may be used to continuously monitor ethylene oxide concentration at the inlet and outlet of the control device using a GC/FID or GC/PID; this procedure may be used only if a vent may be sampled and analyzed by the GC/FID or GC/PID once every 5 minutes throughout a 1-hour test run.

(A) Follow the procedures in section 6 of Method 18 and choose the appropriate column, analytical apparatus, and calibration gases for the analysis of the sample.

(B) Follow the procedures in paragraphs (b)(1)(iv)(B)(2)(ii) through (iv) of this section.

(C) Determine control device efficiency (% Eff) using the following equation:

$$\% \text{ Eff} = \frac{W_i - W_o}{W_i} \times 100$$

where:

% Eff=percent efficiency

$W_i$ =mass flow rate into the control device

$W_o$ =mass flow rate out of the control device

(D) Repeat the procedures in paragraphs (d)(1)(i)(A) through (C) of this section three times. The arithmetic average percent efficiency of the three runs shall determine the overall efficiency of the control device.

(ii) The Tedlar bag sampling procedure in section 7.1 of Method 18 may be used to collect samples of inlet and exhaust gas throughout a 1-hour test run.

(A) Continuously sample a slipstream of the control device inlet and outlet into a Tedlar bag by having a Tedlar bag attached to the slipstream for the entire duration of the run for an integrated bag sample. Whenever a Tedlar bag is full, a new bag must be reattached immediately. Note the time the bag is changed so the sample time and corresponding flow rates can be determined for each bag.

(B) Follow the procedures in section 6 of Method 18 and choose the appropriate column, analytical apparatus, and calibration gases for the analysis of the bag samples collected. The bag

samples shall be analyzed within 8 hours of collection.

(C) Follow the procedures in paragraphs (b)(1)(iv)(B)(2)(ii) through (iv) of this section.

(D) Determine control device efficiency (% Eff) using the equation in paragraph (d)(1)(i)(C) of this section.

(E) Repeat the procedures in paragraphs (d)(1)(ii)(A) through (D) of this section three times. The arithmetic average percent efficiency of the three runs shall determine the overall efficiency of the control device.

(2) *Chamber exhaust vent (not manifolded)*. For determining the efficiency of non-manifolded chamber exhaust vent control devices, either of the following test methods (paragraph (d)(2)(i) or (ii) of this section) may be used:

(i) The direct interface sampling and analysis procedures described in Method 18, section 7.2 or 7.3, may be used to continuously monitor ethylene oxide concentration at the inlet and outlet of the control device using a GC/FID or GC/PID; these procedures may be used only if a vent may be sampled and analyzed by the GC/FID or GC/PID once per minute for the duration of each cycle when the chamber exhaust vent is operated.

(A) Follow the procedures in section 6 of Method 18 and choose the appropriate column, analytical apparatus, and calibration gases for the analysis of the sample.

(B) Follow the procedures in paragraphs (b)(1)(iv)(B)(2)(ii) through (iv) of this section.

(C) Determine control device efficiency (% Eff) using the following equation: where:

$$\% \text{ Eff} = \frac{W_i - W_o}{W_i} \times 100$$

where:

% Eff = percent efficiency

$W_i$  = mass flow rate into the control device

$W_o$  = mass flow rate out of the control device

(D) Repeat the procedures in paragraphs (d)(2)(i)(A) through (C) of this section three times. The arithmetic average percent efficiency of the three

runs shall determine the overall efficiency of the control device.

(ii) The Tedlar bag sampling procedure in section 7.1 of Method 18 may be used to collect samples of inlet and exhaust gas for the duration of each cycle when the chamber exhaust vent is operated.

(A) Continuously sample a slipstream of the control device inlet and outlet into a Tedlar bag by having a Tedlar bag attached to the slipstream for the entire duration of the run for an integrated bag sample. Whenever a Tedlar bag is full, a new bag must be reattached immediately. Note the time the bag is changed so the sample time and corresponding flow rates can be determined for each bag.

(B) Follow the procedures in section 6 of Method 18 and choose the appropriate column, analytical apparatus, and calibration gases for the analysis of the bag samples collected. The bag samples shall be analyzed within 8 hours of collection.

(C) Follow the procedures in paragraphs (b)(1)(iv)(B)(2)(ii) through (iv) of this section.

(D) Determine control device efficiency (% Eff) using the equation in paragraph (d)(2)(i)(C) of this section.

(E) Repeat the procedures in paragraphs (d)(2)(ii)(A) through (D) of this section three times. The arithmetic average percent efficiency of the three runs shall determine the overall efficiency of the control device.

(iii) In the event that the outlet concentration from the control device is below the detection limit for ethylene oxide for determining the efficiency in paragraph (d)(2)(i)(C) or (ii)(D) of this section, the owner or operator shall assume the control device is meeting the standard in §63.362(e)(1) or (2) if the inlet ethylene oxide concentration is at or below approximately 50 ppmv.

(e) *Determination of baseline parameters for acid-water scrubbers.* The procedures in this paragraph shall be used to determine the monitored parameters established in §63.363(b), (d), or (e) for acid-water scrubbers and to monitor the parameters as established in §63.364(b).

(1) *Ethylene glycol concentration.* For determining the ethylene glycol concentration, the facility owner or opera-

tor shall establish the maximum ethylene glycol concentration as the ethylene glycol concentration averaged over three test runs; the sampling and analysis procedures in ASTM D 3695–88, Standard Test Method for Volatile Alcohols in Water By Direct Aqueous-Injection Gas Chromatography, (incorporated by reference—see §63.14) shall be used to determine the ethylene glycol concentration.

(2) *Scrubber liquor tank level.* For determining the scrubber liquor tank level, the sterilization facility owner or operator shall establish the maximum liquor tank level based on a single measurement of the liquor tank level during one test run.

(f) *Determination of baseline temperature for oxidation units.* The procedures in this paragraph shall be used to demonstrate the baseline temperature required in §63.363(b), (c), (d), or (e) for catalytic oxidation units or thermal oxidation units and to continuously monitor the oxidation temperature as established in §63.364(c).

(1) *Sterilization chamber vent.* The sterilization facility owner or operator shall establish the baseline temperature for the sterilization chamber vent as the temperature for the catalytic oxidation unit or the oxidation temperature at the exhaust point from the thermal oxidation unit averaged over three test runs using the procedures in paragraph (b)(2) of this section.

(2) *Aeration room vent.* The sterilization facility owner or operator shall establish the baseline temperature for the aeration room vent as the temperature for the catalytic oxidation unit or the oxidation temperature at the exhaust point from the thermal oxidation unit averaged over three test runs using the procedures in paragraph (d)(1) of this section.

(3) *Chamber exhaust vent.* The sterilization facility owner or operator shall establish the baseline temperature for the chamber exhaust vent as the temperature for the catalytic oxidation unit or the oxidation temperature at the exhaust point from the thermal oxidation unit averaged over three test runs using the procedures in paragraph (d)(2) of this section.

(g) An owner or operator of a sterilization facility seeking to demonstrate compliance with the standards found at § 63.362(c), (d), or (e) with a control device other than an acid-water scrubber or catalytic or thermal oxidation unit shall provide to the Administrator the information requested under § 63.363(f). The owner or operator shall submit: a description of the device; test results collected in accordance with § 63.363(f) verifying the performance of the device for controlling ethylene oxide emissions to the atmosphere to the levels required by the applicable standards; the appropriate operating parameters that will be monitored; and the frequency of measuring and recording to establish continuous compliance with the standards. The monitoring plan submitted identifying the compliance monitoring is subject to the Administrator's approval. The owner or operator of the sterilization facility shall install, calibrate, operate, and maintain the monitor(s) approved by the Administrator based on the information submitted by the owner or operator. The owner or operator shall include in the information submitted to the Administrator proposed performance specifications and quality assurance procedures for their monitors. The Administrator may request further information and shall approve appropriate test methods and procedures.

(h) An owner or operator of a sterilization facility seeking to demonstrate compliance with the standards found at §§ 63.362(d) or (e) with a monitoring device or procedure other than a gas chromatograph shall provide to the Administrator information describing the operation of the monitoring device or procedure and the parameter(s) that would indicate proper operation and maintenance of the device or procedure. The Administrator may request further information and will specify appropriate test methods and procedures.

#### § 63.366 Reporting requirements.

(a) The owner or operator of a source subject to the emissions standards in § 63.362 shall fulfill all reporting requirements in §§ 63.10(a), (d), (e), and (f) of subpart A, according to the applica-

bility in Table 1 of § 63.360. These reports will be made to the Administrator at the appropriate address identified in § 63.13 of subpart A of this part.

(1) Reports required by subpart A and this section may be sent by U.S. mail, fax, or by another courier.

(i) Submittals sent by U.S. mail shall be postmarked on or before the specified date.

(ii) Submittals sent by other methods shall be received by the Administrator on or before the specified date.

(2) If acceptable to both the Administrator and the owner or operator of a source, reports may be submitted on electronic media.

(3) Content and submittal dates for excess emissions and monitoring system performance reports. All excess emissions and monitoring system performance reports and all summary reports, if required per § 63.10(e)(3) (vii) and (viii) of subpart A of this part, shall be delivered or postmarked within 30 days following the end of each calendar half or quarter as appropriate (see § 63.10(e)(3) (i) through (iv) for applicability). Written reports of excess emissions or exceedances of process or control system parameters shall include all information required in § 63.10(c) (5) through (13) of subpart A of this part as applicable in Table 1 of § 63.360 and information from any calibration tests in which the monitoring equipment is not in compliance with PS-9 or the method used for temperature calibration. The written report shall also include the name, title, and signature of the responsible official who is certifying the accuracy of the report. When no excess emissions or exceedances have occurred or monitoring equipment has not been inoperative, repaired, or adjusted, such information shall be stated in the report.

(b) *Construction and reconstruction.* The owner or operator of each source using 10 tons shall fulfill all requirements for construction or reconstruction of a source in § 63.5 of subpart A of this part, according to the applicability in Table 1 of § 63.360, and in this paragraph.

(1) *Applicability.* (i) This paragraph and § 63.5 of subpart A of this part implement the preconstruction review requirements of section 112(i)(1) for

sources subject to these emissions standards. In addition, this paragraph and §63.5 of subpart A of this part include other requirements for constructed and reconstructed sources that are or become subject to these emissions standards.

(ii) After the effective date, the requirements in this section and in §63.5 of subpart A of this part apply to owners or operators who construct a new source or reconstruct a source subject to these emissions standards after December 6, 1994. New or reconstructed sources subject to these emissions standards with an initial startup date before the effective date are not subject to the preconstruction review requirements specified in paragraphs (b) (2) and (3) of this section and §63.5(d) (3) and (4) and (e) of subpart A of this part.

(2) After the effective date, whether or not an approved permit program is effective in the State in which a source is (or would be) located, no person may construct a new source or reconstruct a source subject to these emissions standards, or reconstruct a source such that the source becomes a source subject to these emissions standards, without obtaining advance written approval from the Administrator in accordance with the procedures specified in paragraph (b)(3) of this section and §63.5(d) (3) and (4) and (e) of subpart A of this part.

(3) *Application for approval of construction or reconstruction.* The provisions of paragraph (b)(3) of this section and §63.5(d) (3) and (4) of subpart A of this part implement section 112(i)(1) of the Act.

(i) *General application requirements.* (A) An owner or operator who is subject to the requirements of paragraph (b)(2) of this section shall submit to the Administrator an application for approval of the construction of a new source subject to these emissions standards, the reconstruction of a source subject to these emissions standards, or the reconstruction of a source such that the source becomes a source subject to these emissions standards. The application shall be submitted as soon as practicable before the construction or reconstruction is planned to commence (but not sooner

than the effective date) if the construction or reconstruction commences after the effective date. The application shall be submitted as soon as practicable before the initial startup date but no later than 60 days after the effective date if the construction or reconstruction had commenced and the initial startup date had not occurred before the effective date. The application for approval of construction or reconstruction may be used to fulfill the initial notification requirements of paragraph (c)(1)(iii) of this section. The owner or operator may submit the application for approval well in advance of the date construction or reconstruction is planned to commence in order to ensure a timely review by the Administrator and that the planned commencement date will not be delayed.

(B) A separate application shall be submitted for each construction or reconstruction. Each application for approval of construction or reconstruction shall include at a minimum:

(1) The applicant's name and address.

(2) A notification of intention to construct a new source subject to these emissions standards or make any physical or operational change to a source subject to these emissions standards that may meet or has been determined to meet the criteria for a reconstruction, as defined in §63.2 of subpart A of this part.

(3) The address (i.e., physical location) or proposed address of the source.

(4) An identification of the relevant standard that is the basis of the application.

(5) The expected commencement date of the construction or reconstruction.

(6) The expected completion date of the construction or reconstruction.

(7) The anticipated date of (initial) startup of the source.

(8) The type and quantity of hazardous air pollutants emitted by the source, reported in units and averaging times and in accordance with the test methods specified in the standard, or if actual emissions data are not yet available, an estimate of the type and quantity of hazardous air pollutants expected to be emitted by the source reported in units and averaging times specified. The owner or operator may submit percent reduction information,

if the standard is established in terms of percent reduction. However, operating parameters, such as flow rate, shall be included in the submission to the extent that they demonstrate performance and compliance.

(9) Other information as specified in paragraph (b)(3)(ii) of this section and § 63.5(d)(3) of subpart A of this part.

(C) An owner or operator who submits estimates or preliminary information in place of the actual emissions data and analysis required in paragraphs (b)(3)(i)(B)(8) and (ii) of this section shall submit the actual, measured emissions data and other correct information as soon as available but no later than with the notification of compliance status required in paragraph (c)(2) of this section.

(ii) *Application for approval of construction.* Each application for approval of construction shall include, in addition to the information required in paragraph (b)(3)(i)(B) of this section, technical information describing the proposed nature, size, design, operating design capacity, and method of operation of the source subject to these emissions standards, including an identification of each point of emission for each hazardous air pollutant that is emitted (or could be emitted) and a description of the planned air pollution control system (equipment or method) for each emission point. The description of the equipment to be used for the control of emissions shall include each control device for each hazardous air pollutant and the estimated control efficiency (percent) for each control device. The description of the method to be used for the control of emissions shall include an estimated control efficiency (percent) for that method. Such technical information shall include calculations of emission estimates in sufficient detail to permit assessment of the validity of the calculations. An owner or operator who submits approximations of control efficiencies under paragraph (b)(3) of this section shall submit the actual control efficiencies as specified in paragraph (b)(3)(i)(C) of this section.

(4) *Approval of construction or reconstruction based on prior State preconstruction review.* (i) The Administrator may approve an application for

construction or reconstruction specified in paragraphs (b)(2) and (3) of this section and § 63.5(d)(3) and (4) of subpart A of this part if the owner or operator of a new or reconstructed source who is subject to such requirement demonstrates to the Administrator's satisfaction that the following conditions have been (or will be) met:

(A) The owner or operator of the new or reconstructed source subject to these emissions standards has undergone a preconstruction review and approval process in the State in which the source is (or would be) located before the effective date and has received a federally enforceable construction permit that contains a finding that the source will meet these emissions standards as proposed, if the source is properly built and operated;

(B) In making its finding, the State has considered factors substantially equivalent to those specified in § 63.5(e)(1) of subpart A of this part.

(ii) The owner or operator shall submit to the Administrator the request for approval of construction or reconstruction no later than the application deadline specified in paragraph (b)(3)(i) of this section. The owner or operator shall include in the request information sufficient for the Administrator's determination. The Administrator will evaluate the owner or operator's request in accordance with the procedures specified in § 63.5 of subpart A of this part. The Administrator may request additional relevant information after the submittal of a request for approval of construction or reconstruction.

(c) *Notification requirements.* The owner or operator of each source subject to the emissions standards in § 63.362 shall fulfill all notification requirements in § 63.9 of subpart A of this part, according to the applicability in Table 1 of § 63.360, and in this paragraph.

(1) *Initial notifications.* (i)(A) If a source that otherwise would be subject to these emissions standards subsequently increases its use of ethylene oxide within any consecutive 12-month period after December 6, 1996, such that the source becomes subject to these emissions standards or other requirements, such source shall be subject to

the notification requirements of § 63.9 of subpart A of this part.

(B) Sources subject to these emissions standards may use the application for approval of construction or reconstruction under paragraph (b)(3)(ii) of this section and § 63.5(d)(3) of subpart A of this part, respectively, if relevant to fulfill the initial notification requirements.

(ii) The owner or operator of a new or reconstructed source subject to these emissions standards that has an initial startup date after the effective date and for which an application for approval of construction or reconstruction is required under paragraph (b)(3) of this section and § 63.5(d)(3) and (4) of subpart A of this part shall provide the following information in writing to the Administrator:

(A) A notification of intention to construct a new source subject to these emissions standards, reconstruct a source subject to these emissions standards, or reconstruct a source such that the source becomes a source subject to these emissions standards with the application for approval of construction or reconstruction as specified in paragraph (b)(3)(i)(A) of this section;

(B) A notification of the date when construction or reconstruction was commenced, submitted simultaneously with the application for approval of construction or reconstruction, if construction or reconstruction was commenced before the effective date of these standards;

(C) A notification of the date when construction or reconstruction was commenced, delivered or postmarked not later than 30 days after such date, if construction or reconstruction was commenced after the effective date of these standards;

(D) A notification of the anticipated date of startup of the source, delivered or postmarked not more than 60 days nor less than 30 days before such date; and

(E) A notification of the actual date of initial startup of the source, delivered or postmarked within 15 calendar days after that date.

(iii) After the effective date, whether or not an approved permit program is effective in the State in which a source subject to these emissions standards is

(or would be) located, an owner or operator who intends to construct a new source subject to these emissions standards or reconstruct a source subject to these emissions standards, or reconstruct a source such that it becomes a source subject to these emissions standards, shall notify the Administrator in writing of the intended construction or reconstruction. The notification shall be submitted as soon as practicable before the construction or reconstruction is planned to commence (but no sooner than the effective date of these standards) if the construction or reconstruction commences after the effective date of the standard. The notification shall be submitted as soon as practicable before the initial startup date but no later than 60 days after the effective date of this standard if the construction or reconstruction had commenced and the initial startup date has not occurred before the standard's effective date. The notification shall include all the information required for an application for approval of construction or reconstruction as specified in paragraph (b)(3) of this section and § 63.5(d)(3) and (4) of subpart A of this part. For sources subject to these emissions standards, the application for approval of construction or reconstruction may be used to fulfill the initial notification requirements of § 63.9 of subpart A of this part.

(2) If an owner or operator of a source subject to these emissions standards submits estimates or preliminary information in the application for approval of construction or reconstruction required in paragraph (b)(3)(i) of this section and § 63.5(d)(3) of subpart A of this part, respectively, in place of the actual emissions data or control efficiencies required in paragraphs (b)(3)(i)(B)(8) and (ii) of this section, the owner or operator shall submit the actual emissions data and other correct information as soon as available but no later than with the initial notification of compliance status.

(3) The owner or operator of any existing sterilization facility subject to this subpart shall also include the amount of ethylene oxide used during the previous consecutive 12-month period in the initial notification report

required by § 63.9(b)(2) and (3) of subpart A of this part. For new sterilization facilities subject to this subpart, the amount of ethylene oxide used shall be an estimate of expected use during the first consecutive 12-month period of operation.

**§ 63.367 Recordkeeping requirements.**

(a) The owner or operator of a source subject to the emissions standards in § 63.362 shall comply with the recordkeeping requirements in §§ 63.10(b) and (c) of subpart A of this part, according to the applicability in Table 1 of § 63.360, and in this section.

(b) The owners or operators of a source using 1 to 10 tons not subject to an emissions standard in § 63.362 shall maintain records of ethylene oxide use on a 12-month rolling average basis (until the source changes its operations to become a source subject to an emissions standard in § 63.362). These records shall be kept onsite at the source for a period of 5 years.

(c) The owners or operators of a source using less than 1 ton shall maintain records of ethylene oxide use on a 12-month rolling average basis (until the source changes its operations to become a source subject to the emissions standards in § 63.362). These records shall be kept onsite at the source for a period of 5 years.

**Subpart P—[Reserved]**

**Subpart Q—National Emission Standards for Hazardous Air Pollutants for Industrial Process Cooling Towers**

SOURCE: 59 FR 46350, Sept. 8, 1994, unless otherwise noted.

**§ 63.400 Applicability.**

(a) The provisions of this subpart apply to all new and existing industrial process cooling towers that are operated with chromium-based water treatment chemicals on or after September 8, 1994, and are either major sources or are integral parts of facilities that are major sources as defined in § 63.401.

(b) Table 1 of this subpart specifies the provisions of subpart A that apply and those that do not apply to owners

and operators of IPCT's subject to this subpart.

**§ 63.401 Definitions.**

Terms used in this subpart are defined in the Act, in subpart A of this part, or in this section as follows:

*Chromium-based water treatment chemicals* means any combination of chemical substances containing chromium used to treat water.

*Commenced* means, with respect to construction or reconstruction of an IPCT, that an owner or operator has undertaken a continuous program of construction or reconstruction or that an owner or operator has entered into a contractual obligation to undertake and complete, within a reasonable time, a continuous program of construction or reconstruction.

*Compliance date* means the date by which an affected IPCT is required to be in compliance with this subpart.

*Construction* means the on-site fabrication, erection, or installation of an IPCT.

*Cooling tower* means an open water recirculating device that uses fans or natural draft to draw or force ambient air through the device to cool warm water by direct contact.

*Effective date* means September 8, 1994, for this subpart.

*Existing IPCT* means any affected IPCT that is not a new IPCT.

*Industrial process cooling tower*, also written as "IPCT," means any cooling tower that is used to remove heat that is produced as an input or output of a chemical or industrial process(es), as well as any cooling tower that cools industrial processes in combination with any heating, ventilation, or air conditioning system.

*Initial startup* means the initiation of recirculation water flow within the cooling tower.

*Major source* means any stationary source or group of stationary sources located within a contiguous area and under common control that emits or has the potential to emit considering controls, in the aggregate, 10 tons per year or more of any hazardous air pollutant or 25 tons per year or more of any combination of hazardous air pollutants.

*New IPCT* means any affected IPCT the construction or reconstruction of which commenced after August 12, 1993.

*Owner or operator* means any person who owns, leases, operates, controls, or supervises an IPCT.

*Potential to emit* means the maximum capacity of a stationary source to emit a pollutant under its physical and operational design. Any physical or operational limitation on the capacity of the stationary source to emit a pollutant, including air pollution control equipment and restrictions on hours of operation or on the type or amount of material combusted, stored, or processed, shall be treated as part of its design if the limitation or the effect it would have on emissions is federally enforceable.

*Reconstruction* means the replacement of components of an affected or a previously unaffected IPCT to such an extent that the fixed capital cost of the new components exceeds 50 percent of the fixed capital cost that would be required to construct a comparable new IPCT.

*Responsible official* means one of the following:

(1) For a corporation: a president, secretary, treasurer, or vice president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation, or a duly authorized representative of such person if the representative is responsible for the overall operation of one or more manufacturing, production, or operating facilities and either:

(i) The facilities employ more than 250 persons or have gross annual sales or expenditures exceeding \$25 million (in second quarter 1980 dollars); or

(ii) The delegation of authority to such representative is approved in advance by the Administrator.

(2) For a partnership or sole proprietorship: a general partner or the proprietor, respectively.

(3) For a municipality, State, Federal, or other public agency: either a principal executive officer or ranking elected official. For the purposes of this part, a principal executive officer of a Federal agency includes the chief executive officer having responsibility

for the overall operations of a principal geographic unit of the agency (e.g., a Regional Administrator of the EPA).

(4) For affected sources (as defined in this part) applying for or subject to a title V permit: "responsible official" shall have the same meaning as defined in part 70 of this chapter or Federal title V regulations (42 U.S.C. 7661), whichever is applicable.

*Water treatment chemicals* means any combination of chemical substances used to treat water in cooling towers, including corrosion inhibitors, antiscalants, dispersants, and any other chemical substances used to treat water.

#### §63.402 Standard.

No owner or operator of an IPCT shall use chromium-based water treatment chemicals in any affected IPCT.

#### §63.403 Compliance dates.

The requirements of §63.402 of this subpart shall be applied on the following schedule:

(a) For existing IPCT's, the compliance date shall be 18 months after September 8, 1994.

(b) For new IPCT's that have an initial startup before September 8, 1994, the compliance date shall be September 8, 1994.

(c) For new IPCT's that have an initial startup on or after September 8, 1994, the compliance date shall be the date of the initial startup.

#### §63.404 Compliance demonstrations.

No routine monitoring, sampling, or analysis is required. In accordance with section 114 of the Act, the Administrator or delegated authority can require cooling water sample analysis of an IPCT if there is information to indicate that the IPCT is not in compliance with the requirements of §63.402 of this subpart. If cooling water sample analysis is required:

(a) The water sample analysis shall be conducted in accordance with Method 7196, Chromium, Hexavalent (Colorimetric), contained in the Third Edition of "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication SW-846, (November 1986) and its Revision I, (December 1987), which are available for the cost

of \$110.00 from the Government Printing Office, Superintendent of Documents, Washington, DC 20402, (202) 783-3238 (document number 955-001-00000-1; or Method 3500-Cr D, Colorimetric Method, contained in the 18th Edition of "Standard Methods for the Examination of Water and Wastewater" (1992), which is available from the American Public Health Association, 1015 15th Street, NW., Washington, DC 20005. These methods were approved for incorporation by reference by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. Copies may be inspected as a part of Docket A-91-65, located at the Air and Radiation Docket and Information Center, room M1500, EPA Central Docket Section, 401 M Street, SW., Washington, DC. Copies may be inspected at the Office of the Federal Register, 800 North Capitol Street, NW., suite 700, Washington, DC.

(b) On or after 3 months after the compliance date, a cooling water sample residual hexavalent chromium concentration in excess of 0.5 parts per million by weight shall indicate a violation of §63.402.

**§63.405 Notification requirements.**

(a) *Initial notification.* (1) In accordance with §63.9(b) of subpart A, owners or operators of all affected IPCT's that have an initial startup before September 8, 1994, shall notify the Administrator in writing. The notification, which shall be submitted not later than 12 months after September 8, 1994, shall provide the following information:

- (i) The name and address of the IPCT owner or operator;
- (ii) The address (i.e., physical location) of the affected IPCT;
- (iii) A statement that the notification is being submitted as required by this subpart; and
- (iv) A description of the type of water treatment program used in the affected IPCT, including the chemical name of each corrosion inhibitor ingredient

used; the average concentration of those corrosion inhibitor ingredients maintained in the cooling water; and the material safety data sheet for each water treatment chemical or chemical compound used in the IPCT.

(2) In accordance with §63.9(b) of subpart A, owners or operators of all affected IPCT's that have an initial startup on or after September 8, 1994, shall notify the Administrator in writing that the source is subject to the relevant standard no later than 12 months after initial startup. The notification shall provide all the information required in paragraphs (a)(1)(i) through (a)(1)(iv) of this section.

(b) *Notification of compliance status.* (1) In accordance with §63.9(h) of subpart A, owners or operators of affected IPCT's shall submit to the Administrator a notification of compliance status within 60 days of the date on which the IPCT is brought into compliance with §63.402 of this subpart and not later than 18 months after September 8, 1994.

(2) The notification of compliance status must:

- (i) Be signed by a responsible official who also certifies the accuracy of the report;
- (ii) Certify that source has complied with §63.402 of this subpart; and
- (iii) Include the information required in paragraph (a)(1)(iv) of this section.
- (iv) Include the following statement:

I certify that no chromium-based water treatment chemicals have been introduced since (the initial compliance date) into any IPCT located within the facility for any purpose.

**§63.406 Recordkeeping and reporting requirements.**

To demonstrate continuing compliance with §63.402 of this subpart, the owner or operator of each affected IPCT shall maintain copies of the initial notification and the notification of compliance status as required by §63.405 of this subpart for a period of at least 5 years onsite.

TABLE 1 TO SUBPART Q—GENERAL PROVISIONS APPLICABILITY TO SUBPART Q

| Reference  | Applies to Subpart Q | Comment |
|------------|----------------------|---------|
| 63.1 ..... | Yes.                 |         |

TABLE 1 TO SUBPART Q—GENERAL PROVISIONS APPLICABILITY TO SUBPART Q—Continued

| Reference  | Applies to Subpart Q | Comment   |
|--|----------------------|---|
| 63.2 .....   | Yes.                 |   |
| 63.3 .....   | No.                  |   |
| 63.4 .....   | Yes.                 |   |
| 63.5 .....   | No.                  |   |
| 63.6 (a), (b), (c), and (j) .....  | Yes.                 |   |
| 63.6 (d), (e), (f), (g), (h), and (i) .....                                      | No.                  |   |
| 63.7 .....   | No.                  |   |
| 63.8 .....   | No.                  |   |
| 63.9 (a), (b)(1), (b)(3), (c), (h)(1), (h)(3), (h)(6), and (j).                  | Yes.                 |   |
| 63.9 (b)(2), (b)(4), (b)(5), (b)(6), (d), (e), (f), (g), (h)(2), (h)(4), (h)(5). | No .....             | Requirements for initial notifications and notifications of compliance status are specified in §63.405(a) and §63.405(b), respectively, of subpart Q; other provisions of subpart A are not relevant to IPCT's. |
| 63.10 (a), (b)(1), (b)(2)(xii), (b)(2)(xiv), (b)(3), (d), and (f).               | Yes .....            | Section 63.406 requires an onsite record retention of 5 years.  |
| 63.10 (b)(2) (i) to (xi), (c), and (e) .....                                     | No.                  |   |
| 63.11 .....  | No.                  |   |
| 63.12 to 63.15 .....   | Yes.                 |   |

**Subpart R—National Emission Standards for Gasoline Distribution Facilities (Bulk Gasoline Terminals and Pipeline Breakout Stations)**

SOURCE: 59 FR 64318, Dec. 14, 1994, unless otherwise noted.

**§ 63.420 Applicability.**

(a) The affected source to which the provisions of this subpart apply is each bulk gasoline terminal, except those bulk gasoline terminals:

(1) For which the owner or operator has documented and recorded to the Administrator's satisfaction that the result,  $E_T$ , of the following equation is less than 1, and complies with requirements in paragraphs (c), (d), (e), and (f) of this section:

$$E_T = CF [0.59 (T_F) (1 - CE) + 0.17 (T_E) + 0.08 (T_{ES}) + 0.038 (T_i) + 8.5 \times 10^{-6} (C + KQ)]$$

where:

$E_T$  = emissions screening factor for bulk gasoline terminals;

$CF$  = 0.161 for bulk gasoline terminals that do not handle any reformulated or oxygenated gasoline containing methyl tert-butyl ether (MTBE), *OR*

$CF$  = 1.0 for bulk gasoline terminals that handle reformulated or oxygenated gasoline containing MTBE;

$CE$  = federally enforceable control efficiency of the vapor processing system used to control emissions from fixed-roof gasoline storage vessels [value should be added in decimal form (percent divided by 100)];

$T_F$  = total number of fixed-roof gasoline storage vessels without an internal floating roof;

$T_E$  = total number of external floating roof gasoline storage vessels with only primary seals;

$T_{ES}$  = total number of external floating roof gasoline storage vessels with primary and secondary seals;

$T_i$  = total number of fixed-roof gasoline storage vessels with an internal floating roof;

$C$  = number of valves, pumps, connectors, loading arm valves, and open-ended lines in gasoline service;

$Q$  = federally enforceable gasoline throughput limit or gasoline throughput limit in compliance with paragraphs (c), (d), and (f) of this section (liters/day);

$K$  =  $4.52 \times 10^{-6}$  for bulk gasoline terminals with uncontrolled loading racks (no vapor collection and processing systems), *OR*

$K$  =  $(4.5 \times 10^{-9})(EF + L)$  for bulk gasoline terminals with controlled loading racks (loading racks that have vapor collection and processing systems installed on the emission stream);

$EF$  = federally enforceable emission standard for the vapor processor

outlet emissions (mg of total organic compounds per liter of gasoline loaded);

L = 13 mg/l for gasoline cargo tanks meeting the requirement to satisfy the test criteria for a vapor-tight gasoline tank truck in §60.501 of this chapter, *OR*

L = 304 mg/l for gasoline cargo tanks not meeting the requirement to satisfy the test criteria for a vapor-tight gasoline tank truck in §60.501 of this chapter; or

(2) For which the owner or operator has documented and recorded to the Administrator's satisfaction that the facility is not a major source, or is not located within a contiguous area and under common control of a facility that is a major source, as defined in §63.2 of subpart A of this part.

(b) The affected source to which the provisions of this subpart apply is each pipeline breakout station, except those pipeline breakout stations:

(1) For which the owner or operator has documented and recorded to the Administrator's satisfaction that the result,  $E_P$ , of the following equation is less than 1, and complies with requirements in paragraphs (c), (d), (e), and (f) of this section:

$$E_P = CF [ 6.7 (T_F) (1 - CE) + 0.21 (T_E) + 0.093 (T_{ES}) + 0.1 (T_I) + 5.31 \times 10^{-6} (C) ]$$

where:

$E_P$  = emissions screening factor for pipeline breakout stations, and

the definitions for CF,  $T_F$ , CE,  $T_E$ ,  $T_{ES}$ ,  $T_I$ , and C are the same as provided in paragraph (a)(1) of this section; or

(2) For which the owner or operator has documented and recorded to the Administrator's satisfaction that the facility is not a major source, or is not located within a contiguous area and under common control of a facility that is a major source, as defined in §63.2 of subpart A of this part.

(c) A facility for which the results,  $E_T$  or  $E_P$ , of the calculation in paragraph (a)(1) or (b)(1) of this section has been documented and is less than 1.0 but greater than or equal to 0.50, is exempt from the requirements of this subpart, except that the owner or operator shall:

(1) Operate the facility such that none of the facility parameters used to calculate results under paragraph (a)(1) or (b)(1) of this section, and approved by the Administrator, is exceeded in any rolling 30-day period; and

(2) Maintain records and provide reports in accordance with the provisions of §63.428(i).

(d) A facility for which the results,  $E_T$  or  $E_P$ , of the calculation in paragraph (a)(1) or (b)(1) of this section has been documented and is less than 0.50, is exempt from the requirements of this subpart, except that the owner or operator shall:

(1) Operate the facility such that none of the facility parameters used to calculate results under paragraph (a)(1) or (b)(1) of this section is exceeded in any rolling 30-day period; and

(2) Maintain records and provide reports in accordance with the provisions of §63.428(j).

(e) The provisions of paragraphs (a)(1) and (b)(1) of this section shall not be used to determine applicability to bulk gasoline terminals or pipeline breakout stations that are either:

(1) Located within a contiguous area and under common control with another bulk gasoline terminal or pipeline breakout station, or

(2) Located within a contiguous area and under common control with other sources not specified in paragraphs (a)(1) or (b)(1) of this section, that emit or have the potential to emit a hazardous air pollutant.

(f) Upon request by the Administrator, the owner or operator of a bulk gasoline terminal or pipeline breakout station subject to the provisions of any paragraphs in this section shall demonstrate compliance with those paragraphs.

(g) Each owner or operator of a bulk gasoline terminal or pipeline breakout station subject to the provisions of this subpart that is also subject to applicable provisions of 40 CFR part 60, subpart Kb or XX of this chapter shall comply only with the provisions in each subpart that contain the most stringent control requirements for that facility.

(h) Each owner or operator of an affected source bulk gasoline terminal or pipeline breakout station is subject to

the provisions of 40 CFR part 63, subpart A—General Provisions, as indicated in Table 1.

(i) A bulk gasoline terminal or pipeline breakout station with a Standard Industrial Classification code 2911 located within a contiguous area and under common control with a refinery complying with subpart CC, §§ 63.646, 63.648, 63.649, and 63.650 is not subject to subpart R standards, except as specified in subpart CC, § 63.650.

(j) *Rules Stayed for Reconsideration.* Notwithstanding any other provision of this subpart, the December 14, 1995 compliance date for existing facilities in § 63.424(e) and § 63.428(a), (i)(1), and (j)(1) of this subpart is stayed from December 8, 1995, to March 7, 1996.

[59 FR 64318, Dec. 14, 1994, as amended at 60 FR 43260, Aug. 18, 1995; 60 FR 62992, Dec. 8, 1995]

#### § 63.421 Definitions.

As used in this subpart, all terms not defined herein shall have the meaning given them in the Act; in subparts A, K, Ka, Kb, and XX of part 60 of this chapter; or in subpart A of this part. All terms defined in both subpart A of part 60 of this chapter and subpart A of this part shall have the meaning given in subpart A of this part. For purposes of this subpart, definitions in this section supersede definitions in other parts or subparts.

*Controlled loading rack*, for the purposes of § 63.420, means a loading rack equipped with vapor collection and processing systems that reduce displaced vapor emissions to no more than 80 milligrams of total organic compounds per liter of gasoline loaded, as measured using the test methods and procedures in § 60.503 (a) through (c) of this chapter.

*Equipment* means each valve, pump, pressure relief device, sampling connection system, open-ended valve or line, and flange or other connector in the gasoline liquid transfer and vapor collection systems. This definition also includes the entire vapor processing system except the exhaust port(s) or stack(s).

*Gasoline cargo tank* means a delivery tank truck or railcar which is loading gasoline or which has loaded gasoline on the immediately previous load.

*In gasoline service* means that a piece of equipment is used in a system that transfers gasoline or gasoline vapors.

*Operating parameter value* means a value for an operating or emission parameter of the vapor processing system (e.g., temperature) which, if maintained continuously by itself or in combination with one or more other operating parameter values, determines that an owner or operator has complied with the applicable emission standard. The operating parameter value is determined using the procedures outlined in § 63.425(b).

*Oxygenated gasoline* means the same as defined in 40 CFR 80.2(rr).

*Pipeline breakout station* means a facility along a pipeline containing storage vessels used to relieve surges or receive and store gasoline from the pipeline for reinjection and continued transportation by pipeline or to other facilities.

*Reformulated gasoline* means the same as defined in 40 CFR 80.2(ee).

*Uncontrolled loading rack* means a loading rack used to load gasoline cargo tanks that is not a controlled loading rack.

*Vapor-tight gasoline cargo tank* means a gasoline cargo tank which has demonstrated within the 12 preceding months that it meets the annual certification test requirements in § 63.425(e), and which is subject at all times to the test requirements in § 63.425 (f), (g), and (h).

*Volatile organic liquid (VOL)* means, for the purposes of this subpart, gasoline.

#### § 63.422 Standards: Loading racks.

(a) Each owner or operator of loading racks at a bulk gasoline terminal subject to the provisions of this subpart shall comply with the requirements in § 60.502 of this chapter except for paragraphs (b), (c), and (j) of that section. For purposes of this section, the term “affected facility” used in § 60.502 of this chapter means the loading racks that load gasoline cargo tanks at the bulk gasoline terminals subject to the provisions of this subpart.

(b) Emissions to the atmosphere from the vapor collection and processing systems due to the loading of gasoline

cargo tanks shall not exceed 10 milligrams of total organic compounds per liter of gasoline loaded.

(c) Each owner or operator of a bulk gasoline terminal subject to the provisions of this subpart shall comply with § 60.502(e) of this chapter as follows:

(1) For the purposes of this section, the term "tank truck" as used in § 60.502(e) of this chapter means "cargo tank."

(2) Section 60.502(e)(5) of this chapter is changed to read: The terminal owner or operator shall take steps assuring that the nonvapor-tight gasoline cargo tank will not be reloaded at the facility until vapor tightness documentation for that gasoline cargo tank is obtained which documents that:

(i) The gasoline cargo tank meets the applicable test requirements in § 63.425(e);

(ii) For each gasoline cargo tank failing the test in § 63.425 (f) or (g) at the facility, the cargo tank either:

(A) Before repair work is performed on the cargo tank, meets the test requirements in § 63.425 (g) or (h), or

(B) After repair work is performed on the cargo tank before or during the tests in § 63.425 (g) or (h), subsequently passes the annual certification test described in § 63.425(e).

(d) Each owner or operator shall meet the requirements in all paragraphs of this section as expeditiously as practicable, but no later than December 15, 1997, at existing facilities and upon startup for new facilities.

[59 FR 64318, Dec. 14, 1994; 60 FR 32913, June 26, 1995]

#### § 63.423 Standards: Storage vessels.

(a) Each owner or operator of a bulk gasoline terminal or pipeline breakout station subject to the provisions of this subpart shall equip each gasoline storage vessel with a design capacity greater than or equal to 75 m<sup>3</sup> according to the requirements in § 60.112b(a) (1) through (4) of this chapter, except for the requirements in §§ 60.112b(a)(1) (iv) through (ix) and 60.112b(a)(2)(ii) of this chapter.

(b) Each owner or operator shall equip each gasoline external floating roof storage vessel with a design capacity greater than or equal to 75 m<sup>3</sup> according to the requirements in

§ 60.112b(a)(2)(ii) of this chapter if such storage vessel does not currently meet the requirements in paragraph (a) of this section.

(c) Each gasoline storage vessel at existing bulk gasoline terminals and pipeline breakout stations shall be in compliance with the requirements in paragraphs (a) and (b) of this section as expeditiously as practicable, but no later than December 15, 1997. At new bulk gasoline terminals and pipeline breakout stations, compliance shall be achieved upon startup.

#### § 63.424 Standards: Equipment leaks.

(a) Each owner or operator of a bulk gasoline terminal or pipeline breakout station subject to the provisions of this subpart shall perform a monthly leak inspection of all equipment in gasoline service. For this inspection, detection methods incorporating sight, sound, and smell are acceptable. Each piece of equipment shall be inspected during the loading of a gasoline cargo tank.

(b) A log book shall be used and shall be signed by the owner or operator at the completion of each inspection. A section of the log shall contain a list, summary description, or diagram(s) showing the location of all equipment in gasoline service at the facility.

(c) Each detection of a liquid or vapor leak shall be recorded in the log book. When a leak is detected, an initial attempt at repair shall be made as soon as practicable, but no later than 5 calendar days after the leak is detected. Repair or replacement of leaking equipment shall be completed within 15 calendar days after detection of each leak, except as provided in paragraph (d) of this section.

(d) Delay of repair of leaking equipment will be allowed upon a demonstration to the Administrator that repair within 15 days is not feasible. The owner or operator shall provide the reason(s) a delay is needed and the date by which each repair is expected to be completed.

(e) Initial compliance with the requirements in paragraphs (a) through (d) of this section shall be achieved by existing sources as expeditiously as practicable, but no later than December 15, 1997. For new sources, initial

compliance shall be achieved upon startup.

(f) As an alternative to compliance with the provisions in paragraphs (a) through (d) of this section, owners or operators may implement an instrument leak monitoring program that has been demonstrated to the Administrator as at least equivalent.

(g) Owners and operators shall not allow gasoline to be handled in a manner that would result in vapor releases to the atmosphere for extended periods of time. Measures to be taken include, but are not limited to, the following:

- (1) Minimize gasoline spills;
- (2) Clean up spills as expeditiously as practicable;
- (3) Cover all open gasoline containers with a gasketed seal when not in use;
- (4) Minimize gasoline sent to open waste collection systems that collect and transport gasoline to reclamation and recycling devices, such as oil/water separators.

[59 FR 64318, Dec. 14, 1994, as amended at 61 FR 7723, Feb. 29, 1996]

#### § 63.425 Test methods and procedures.

(a) Each owner or operator subject to the emission standard in § 63.422(b) or § 60.112b(a)(3)(ii) of this chapter shall conduct a performance test on the vapor processing system according to the test methods and procedures in § 60.503, except a reading of 500 ppm shall be used to determine the level of leaks to be repaired under § 60.503(b). If a flare is used to control emissions, and emissions from this device cannot be measured using these methods and procedures, the provisions of § 63.11(b) shall apply.

(b) For each performance test conducted under paragraph (a) of this section, the owner or operator shall determine a monitored operating parameter value for the vapor processing system using the following procedure:

(1) During the performance test, continuously record the operating parameter under § 63.427(a);

(2) Determine an operating parameter value based on the parameter data monitored during the performance test, supplemented by engineering assessments and the manufacturer's recommendations; and

(3) Provide for the Administrator's approval the rationale for the selected operating parameter value, and monitoring frequency and averaging time, including data and calculations used to develop the value and a description of why the value, monitoring frequency, and averaging time demonstrate continuous compliance with the emission standard in § 63.422(b) or § 60.112b(a)(3)(ii) of this chapter.

(c) For performance tests performed after the initial test, the owner or operator shall document the reasons for any change in the operating parameter value since the previous performance test.

(d) The owner or operator of each gasoline storage vessel subject to the provisions of § 63.423 shall comply with § 60.113b of this chapter. If a closed vent system and control device are used, as specified in § 60.112b(a)(3) of this chapter, to comply with the requirements in § 63.423, the owner or operator shall also comply with the requirements in paragraph (b) of this section.

(e) *Annual certification test.* The annual certification test for gasoline cargo tanks shall consist of the following test methods and procedures:

(1) Method 27, appendix A, 40 CFR part 60. Conduct the test using a time period (t) for the pressure and vacuum tests of 5 minutes. The initial pressure ( $P_i$ ) for the pressure test shall be 460 mm H<sub>2</sub>O (18 in. H<sub>2</sub>O), gauge. The initial vacuum ( $V_i$ ) for the vacuum test shall be 150 mm H<sub>2</sub>O (6 in. H<sub>2</sub>O), gauge. The maximum allowable pressure and vacuum changes ( $\Delta p$ ,  $\Delta v$ ) are as shown in the second column of Table 2 of this paragraph.

TABLE 2—ALLOWABLE CARGO TANK TEST PRESSURE OR VACUUM CHANGE

| Cargo tank or compartment capacity, liters (gal) | Annual certification-allowable pressure or vacuum change ( $\Delta p$ , $\Delta v$ ) in 5 minutes, mm H <sub>2</sub> O (in. H <sub>2</sub> O) | Allowable pressure change ( $\Delta p$ ) in 5 minutes at any time, mm H <sub>2</sub> O (in. H <sub>2</sub> O) |
|--|---|---|
| 9,464 or more (2,500 or more)                    | 25 (1.0)  | 64 (2.5)  |
| 9,463 to 5,678 (2,499 to 1,500)                  | 38 (1.5)  | 76 (3.0)  |
| 5,679 to 3,785 (1,499 to 1,000)                  | 51 (2.0)  | 89 (3.5)  |
| 3,782 or less (999 or less)                      | 64 (2.5)  | 102 (4.0)   |

(2) Pressure test of the cargo tank's internal vapor valve as follows:

(i) After completing the tests under paragraph (e)(1) of this section, use the procedures in Method 27 to repressurize the tank to 460 mm H<sub>2</sub>O (18 in. H<sub>2</sub>O), gauge. Close the tank's internal vapor valve(s), thereby isolating the vapor return line and manifold from the tank.

(ii) Relieve the pressure in the vapor return line to atmospheric pressure, then reseal the line. After 5 minutes, record the gauge pressure in the vapor return line and manifold. The maximum allowable 5-minute pressure increase is 130 mm H<sub>2</sub>O (5 in. H<sub>2</sub>O).

(f) *Leak detection test.* The leak detection test shall be performed using Method 21, appendix A, 40 CFR part 60, except omit section 4.3.2 of Method 21. A vapor-tight gasoline cargo tank shall have no leaks at any time when tested according to the procedures in this paragraph.

(1) The leak definition shall be 21,000 ppm as propane. Use propane to calibrate the instrument, setting the span at the leak definition. The response time to 90 percent of the final stable reading shall be less than 8 seconds for the detector with the sampling line and probe attached.

(2) In addition to the procedures in Method 21, include the following procedures:

(i) Perform the test on each compartment during loading of that compartment or while the compartment is still under pressure.

(ii) To eliminate a positive instrument drift, the dwell time for each leak detection shall not exceed two times the instrument response time. Purge the instrument with ambient air between each leak detection. The dura-

tion of the purge shall be in excess of two instrument response times.

(iii) Attempt to block the wind from the area being monitored. Record the highest detector reading and location for each leak.

(g) *Nitrogen pressure decay field test.* For those cargo tanks with manifolded product lines, this test procedure shall be conducted on each compartment.

(1) Record the cargo tank capacity. Upon completion of the loading operation, record the total volume loaded. Seal the cargo tank vapor collection system at the vapor coupler. The sealing apparatus shall have a pressure tap. Open the internal vapor valve(s) of the cargo tank and record the initial headspace pressure. Reduce or increase, as necessary, the initial headspace pressure to 460 mm H<sub>2</sub>O (18.0 in. H<sub>2</sub>O), gauge by releasing pressure or by adding commercial grade nitrogen gas from a high pressure cylinder capable of maintaining a pressure of 2,000 psig.

(i) The cylinder shall be equipped with a compatible two-stage regulator with a relief valve and a flow control metering valve. The flow rate of the nitrogen shall be no less than 2 cfm. The maximum allowable time to pressurize cargo tanks with headspace volumes of 1,000 gallons or less to the appropriate pressure is 4 minutes. For cargo tanks with a headspace of greater than 1,000 gallons, use as a maximum allowable time to pressurize 4 minutes or the result from the equation below, whichever is greater.

$$T = V_h \times 0.004$$

where:

T = maximum allowable time to pressurize the cargo tank, min;

V<sub>h</sub> = cargo tank headspace volume during testing, gal.

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(2) It is recommended that after the cargo tank headspace pressure reaches approximately 460 mm H<sub>2</sub>O (18 in. H<sub>2</sub>O), gauge, a fine adjust valve be used to adjust the headspace pressure to 460 mm H<sub>2</sub>O (18.0 in. H<sub>2</sub>O), gauge for the next 30 ± 5 seconds.

(3) Reseal the cargo tank vapor collection system and record the headspace pressure after 1 minute. The measured headspace pressure after 1 minute shall be greater than the minimum allowable final headspace pressure (P<sub>F</sub>) as calculated from the following equation:

$$P_F = 18 \left( \frac{(18 - N)}{18} \right)^{\left( \frac{V_s}{5(V_h)} \right)}$$

where:

- (P<sub>F</sub>) = minimum allowable final headspace pressure, in. H<sub>2</sub>O, gauge;
- V<sub>s</sub> = total cargo tank shell capacity, gal;
- V<sub>h</sub> = cargo tank headspace volume after loading, gal;
- 18.0 = initial pressure at start of test, in. H<sub>2</sub>O, gauge;
- N = 5-minute continuous performance standard at any time from the third column of Table 2 of § 63.425(e) (i), inches H<sub>2</sub>O.

(4) Conduct the internal vapor valve portion of this test by repressurizing the cargo tank headspace with nitrogen to 460 mm H<sub>2</sub>O (18 in. H<sub>2</sub>O), gauge. Close the internal vapor valve(s), wait for 30 ± 5 seconds, then relieve the pressure downstream of the vapor valve in the vapor collection system to atmospheric pressure. Wait 15 seconds, then reseal the vapor collection system. Measure and record the pressure every minute for 5 minutes. Within 5 seconds of the pressure measurement at the end of 5 minutes, open the vapor valve and record the headspace pressure as the "final pressure."

(5) If the decrease in pressure in the vapor collection system is less than at least one of the interval pressure change values in Table 3 of this paragraph, or if the final pressure is equal to or greater than 20 percent of the 1-minute final headspace pressure determined in the test in paragraph (g)(3) of this section, then the cargo tank is

considered to be a vapor-tight gasoline cargo tank.

TABLE 3—PRESSURE CHANGE FOR INTERNAL VAPOR VALVE TEST

| Time interval         | Interval pressure change, mm H <sub>2</sub> O (in. H <sub>2</sub> O) |
|-----------------------|--|
| After 1 minute .....  | 28 (1.1)   |
| After 2 minutes ..... | 56 (2.2)   |
| After 3 minutes ..... | 84 (3.3)   |
| After 4 minutes ..... | 112 (4.4)  |
| After 5 minutes ..... | 140 (5.5)  |

(h) *Continuous performance pressure decay test.* The continuous performance pressure decay test shall be performed using Method 27, appendix A, 40 CFR Part 60. Conduct only the positive pressure test using a time period (t) of 5 minutes. The initial pressure (P<sub>i</sub>) shall be 460 mm H<sub>2</sub>O (18 in. H<sub>2</sub>O), gauge. The maximum allowable 5-minute pressure change (Δp) which shall be met at any time is shown in the third column of Table 2 of § 63.425(e)(1).

[59 FR 64318, Dec. 14, 1994; 60 FR 7627, Feb. 8, 1995; 60 FR 32913, June 26, 1995]

**§ 63.426 Alternative means of emission limitation.**

For determining the acceptability of alternative means of emission limitation for storage vessels under § 63.423, the provisions of § 60.114b of this chapter apply.

**§ 63.427 Continuous monitoring.**

(a) Each owner or operator of a bulk gasoline terminal subject to the provisions of this subpart shall install, calibrate, certify, operate, and maintain, according to the manufacturer's specifications, a continuous monitoring system (CMS) as specified in paragraph (a)(1), (a)(2), (a)(3), or (a)(4) of this section, except as allowed in paragraph (a)(5) of this section.

(1) Where a carbon adsorption system is used, a continuous emission monitoring system (CEMS) capable of measuring organic compound concentration shall be installed in the exhaust air stream.

(2) Where a refrigeration condenser system is used, a continuous parameter monitoring system (CPMS) capable of

measuring temperature shall be installed immediately downstream from the outlet to the condenser section. Alternatively, a CEMS capable of measuring organic compound concentration may be installed in the exhaust air stream.

(3) Where a thermal oxidation system is used, a CPMS capable of measuring temperature shall be installed in the firebox or in the ductwork immediately downstream from the firebox in a position before any substantial heat exchange occurs.

(4) Where a flare is used, a heat-sensing device, such as an ultraviolet beam sensor or a thermocouple, shall be installed in proximity to the pilot light to indicate the presence of a flame.

(5) Monitoring an alternative operating parameter or a parameter of a vapor processing system other than those listed in this paragraph will be allowed upon demonstrating to the Administrator's satisfaction that the alternative parameter demonstrates continuous compliance with the emission standard in § 63.422(b) or § 60.112b(a)(3)(ii) of this chapter.

(b) Each owner or operator of a bulk gasoline terminal subject to the provisions of this subpart shall operate the vapor processing system in a manner not to exceed the operating parameter value for the parameter described in paragraphs (a)(1) and (a)(2) of this section, or to go below the operating parameter value for the parameter described in paragraph (a)(3) of this section, and established using the procedures in § 63.425(b). In cases where an alternative parameter pursuant to paragraph (a)(5) of this section is approved, each owner or operator shall operate the vapor processing system in a manner not to exceed or not to go below, as appropriate, the alternative operating parameter value. Operation of the vapor processing system in a manner exceeding or going below the operating parameter value, as specified above, shall constitute a violation of the emission standard in § 63.422(b).

(c) Each owner or operator of gasoline storage vessels subject to the provisions of § 63.423 shall comply with the monitoring requirements in § 60.116b of this chapter, except records shall be kept for at least 5 years. If a closed

vent system and control device are used, as specified in § 60.112b(a)(3) of this chapter, to comply with the requirements in § 63.423, the owner or operator shall also comply with the requirements in paragraph (a) of this section.

#### § 63.428 Reporting and recordkeeping.

(a) The initial notifications required for existing affected sources under § 63.9(b)(2) shall be submitted by 1 year after an affected source becomes subject to the provisions of this subpart or by December 16, 1996, whichever is later. Affected sources that are major sources on December 16, 1996 and plan to be area sources by December 15, 1997 shall include in this notification a brief, non-binding description of and schedule for the action(s) that are planned to achieve area source status.

(b) Each owner or operator of a bulk gasoline terminal subject to the provisions of this subpart shall keep records of the test results for each gasoline cargo tank loading at the facility as follows:

(1) Annual certification testing performed under § 63.425(e); and

(2) Continuous performance testing performed at any time at that facility under § 63.425 (f), (g), and (h).

(3) The documentation file shall be kept up-to-date for each gasoline cargo tank loading at the facility. The documentation for each test shall include, as a minimum, the following information:

(i) Name of test:

Annual Certification Test—Method 27 (§ 63.425(e)(1)),

Annual Certification Test—Internal Vapor Valve (§ 63.425(e)(2)),

Leak Detection Test (§ 63.425(f)),

Nitrogen Pressure Decay Field Test (§ 63.425(g)), or

Continuous Performance Pressure Decay Test (§ 63.425(h)).

(ii) Cargo tank owner's name and address.

(iii) Cargo tank identification number.

(iv) Test location and date.

(v) Tester name and signature.

(vi) Witnessing inspector, if any: Name, signature, and affiliation.

(vii) Vapor tightness repair: Nature of repair work and when performed in relation to vapor tightness testing.

(viii) Test results: Pressure or vacuum change, mm of water; time period of test; number of leaks found with instrument and leak definition.

(c) Each owner or operator of a bulk gasoline terminal subject to the provisions of this subpart shall:

(1) Keep an up-to-date, readily accessible record of the continuous monitoring data required under § 63.427(a). This record shall indicate the time intervals during which loadings of gasoline cargo tanks have occurred or, alternatively, shall record the operating parameter data only during such loadings. The date and time of day shall also be indicated at reasonable intervals on this record.

(2) Record and report simultaneously with the notification of compliance status required under § 63.9(h):

(i) All data and calculations, engineering assessments, and manufacturer's recommendations used in determining the operating parameter value under § 63.425(b); and

(ii) The following information when using a flare under provisions of § 63.11(b) to comply with § 63.422(b):

(A) Flare design (i.e., steam-assisted, air-assisted, or non-assisted); and

(B) All visible emissions readings, heat content determinations, flow rate measurements, and exit velocity determinations made during the compliance determination required under § 63.425(a).

(3) If an owner or operator requests approval to use a vapor processing system or monitor an operating parameter other than those specified in § 63.427(a), the owner or operator shall submit a description of planned reporting and recordkeeping procedures. The Administrator will specify appropriate reporting and recordkeeping requirements as part of the review of the permit application.

(d) Each owner or operator of storage vessels subject to the provisions of this subpart shall keep records and furnish reports as specified in § 60.115b of this chapter, except records shall be kept for at least 5 years.

(e) Each owner or operator complying with the provisions of § 63.424 (a)

through (d) shall record the following information in the log book for each leak that is detected:

(1) The equipment type and identification number;

(2) The nature of the leak (i.e., vapor or liquid) and the method of detection (i.e., sight, sound, or smell);

(3) The date the leak was detected and the date of each attempt to repair the leak;

(4) Repair methods applied in each attempt to repair the leak;

(5) "Repair delayed" and the reason for the delay if the leak is not repaired within 15 calendar days after discovery of the leak;

(6) The expected date of successful repair of the leak if the leak is not repaired within 15 days; and

(7) The date of successful repair of the leak.

(f) Each owner or operator subject to the provisions of § 63.424 shall report to the Administrator a description of the types, identification numbers, and locations of all equipment in gasoline service. For facilities electing to implement an instrument program under § 63.424(f), the report shall contain a full description of the program.

(1) In the case of an existing source or a new source that has an initial startup date before the effective date, the report shall be submitted with the notification of compliance status required under § 63.9(h), unless an extension of compliance is granted under § 63.6(i). If an extension of compliance is granted, the report shall be submitted on a date scheduled by the Administrator.

(2) In the case of new sources that did not have an initial startup date before the effective date, the report shall be submitted with the application for approval of construction, as described in § 63.5(d).

(g) Each owner or operator of a bulk gasoline terminal or pipeline breakout station subject to the provisions of this subpart shall include in a semiannual report to the Administrator the following information:

(1) Each loading of a gasoline cargo tank for which vapor tightness documentation had not been previously obtained by the facility;

(2) Periodic reports required under paragraph (d) of this section; and

(3) The number of equipment leaks not repaired within 5 days after detection.

(h) Each owner or operator of a bulk gasoline terminal or pipeline breakout station subject to the provisions of this subpart shall include in the excess emissions report to the Administrator required under § 63.10(e)(3) the following information:

(1) Each exceedance or failure to maintain, as appropriate, the monitored operating parameter value determined under § 63.425(b). The report shall include the monitoring data for the days on which exceedances or failures to maintain have occurred, and a description and timing of the steps taken to repair or perform maintenance on the vapor collection and processing systems or the CMS.

(2) Each instance of a nonvapor-tight gasoline cargo tank loading at the facility in which the owner or operator failed to take steps to assure that such cargo tank would not be reloaded at the facility before vapor tightness documentation for that cargo tank was obtained.

(3) Each reloading of a nonvapor-tight gasoline cargo tank at the facility before vapor tightness documentation for that cargo tank is obtained by the facility in accordance with § 63.422(c)(2).

(4) For each occurrence of an equipment leak for which no repair attempt was made within 5 days or for which repair was not completed within 15 days after detection:

(i) The date on which the leak was detected;

(ii) The date of each attempt to repair the leak;

(iii) The reasons for the delay of repair; and

(iv) The date of successful repair.

(i) Each owner or operator of a facility meeting the criteria in § 63.420(c) shall perform the requirements of this paragraph (i), all of which will be available for public inspection:

(1) Document and report to the Administrator not later than December 16, 1996 for existing facilities, within 30 days for existing facilities subject to § 63.420(c) after December 16, 1996, or at

startup for new facilities the methods, procedures, and assumptions supporting the calculations for determining criteria in § 63.420(c);

(2) Maintain records to document that the facility parameters established under § 63.420(c) have not been exceeded; and

(3) Report annually to the Administrator that the facility parameters established under § 63.420(c) have not been exceeded.

(4) At any time following the notification required under paragraph (i)(1) of this section and approval by the Administrator of the facility parameters, and prior to any of the parameters being exceeded, the owner or operator may submit a report to request modification of any facility parameter to the Administrator for approval. Each such request shall document any expected HAP emission change resulting from the change in parameter.

(j) Each owner or operator of a facility meeting the criteria in § 63.420(d) shall perform the requirements of this paragraph (j), all of which will be available for public inspection:

(1) Document and report to the Administrator not later than December 16, 1996 for existing facilities, within 30 days for existing facilities subject to § 63.420(d) after December 16, 1996, or at startup for new facilities the use of the emission screening equations in § 63.420(a)(1) or (b)(1) and the calculated value of  $E_T$  or  $E_P$ ;

(2) Maintain a record of the calculations in § 63.420 (a)(1) or (b)(1), including methods, procedures, and assumptions supporting the calculations for determining criteria in § 63.420(d); and

(3) At any time following the notification required under paragraph (j)(1) of this section, and prior to any of the parameters being exceeded, the owner or operator may notify the Administrator of modifications to the facility parameters. Each such notification shall document any expected HAP emission change resulting from the change in parameter.

[59 FR 64318, Dec. 14, 1994, as amended at 61 FR 7723, Feb. 29, 1996]

#### § 63.429 Delegation of authority.

(a) In delegating implementation and enforcement authority to a State

under section 112(l) of the Act, the authority contained in paragraph (b) of this section shall be retained by the Administrator and not transferred to a State.

(b) The authority conferred in § 63.426 and § 63.427(a)(5) will not be delegated to any State.

TABLE 1 TO SUBPART R—GENERAL PROVISIONS APPLICABILITY TO SUBPART R

| Reference                 | Applies to subpart R | Comment   |
|---------------------------|----------------------|---|
| 63.1(a)(1) .....          | Yes                  |   |
| 63.1(a)(2) .....          | Yes                  |   |
| 63.1(a)(3) .....          | Yes                  |   |
| 63.1(a)(4) .....          | Yes                  |   |
| 63.1(a)(5) .....          | No                   | Section reserved  |
| 63.1(a)(6)(B) .....       | Yes                  |   |
| 63.1(a)(9) .....          | No                   | Section reserved  |
| 63.1(a)(10) .....         | Yes                  |   |
| 63.1(a)(11) .....         | Yes                  |   |
| 63.1(a)(12)–(a)(14) ..... | Yes                  |   |
| 63.1(b)(1) .....          | No                   | Subpart R specifies applicability in § 63.420   |
| 63.1(b)(2) .....          | Yes                  |   |
| 63.1(b)(3) .....          | No                   | Subpart R specifies reporting and recordkeeping for some large area sources in § 63.428 |
| 63.1(c)(1) .....          | Yes                  |   |
| 63.1(c)(2) .....          | Yes                  | Some small sources are not subject to subpart R   |
| 63.1(c)(3) .....          | No                   | Section reserved  |
| 63.1(c)(4) .....          | Yes                  |   |
| 63.1(c)(5) .....          | Yes                  |   |
| 63.1(d) .....             | No                   | Section reserved  |
| 63.1(e) .....             | Yes                  |   |
| 63.2 .....                | Yes                  | Additional definitions in § 63.421  |
| 63.3(a)–(c) .....         | Yes                  |   |
| 63.4(a)(1)–(a)(3) .....   | Yes                  |   |
| 63.4(a)(4) .....          | No                   | Section reserved  |
| 63.4(a)(5) .....          | Yes                  |   |
| 63.4(b) .....             | Yes                  |   |
| 63.4(c) .....             | Yes                  |   |
| 63.5(a)(1) .....          | Yes                  |   |
| 63.5(a)(2) .....          | Yes                  |   |
| 63.5(b)(1) .....          | Yes                  |   |
| 63.5(b)(2) .....          | No                   | Section reserved  |
| 63.5(b)(3) .....          | Yes                  |   |
| 63.5(b)(4) .....          | Yes                  |   |
| 63.5(b)(5) .....          | Yes                  |   |
| 63.5(b)(6) .....          | Yes                  |   |
| 63.5(c) .....             | No                   | Section reserved  |
| 63.5(d)(1) .....          | Yes                  |   |
| 63.5(d)(2) .....          | Yes                  |   |
| 63.5(d)(3) .....          | Yes                  |   |
| 63.5(d)(4) .....          | Yes                  |   |
| 63.5(e) .....             | Yes                  |   |
| 63.5(f)(1) .....          | Yes                  |   |
| 63.5(f)(2) .....          | Yes                  |   |
| 63.6(a) .....             | Yes                  |   |
| 63.6(b)(1) .....          | Yes                  |   |
| 63.6(b)(2) .....          | Yes                  |   |
| 63.6(b)(3) .....          | Yes                  |   |
| 63.6(b)(4) .....          | Yes                  |   |
| 63.6(b)(5) .....          | Yes                  |   |
| 63.6(b)(6) .....          | No                   | Section reserved  |
| 63.6(b)(7) .....          | Yes                  |   |
| 63.6(c)(1) .....          | No                   | Subpart R specifies the compliance date   |
| 63.6(c)(2) .....          | Yes                  |   |
| 63.6(c)(3)–(c)(4) .....   | No                   | Sections reserved   |
| 63.6(c)(5) .....          | Yes                  |   |
| 63.6(d) .....             | No                   | Section reserved  |
| 63.6(e) .....             | Yes                  |   |

TABLE 1 TO SUBPART R—GENERAL PROVISIONS APPLICABILITY TO SUBPART R—Continued

| Reference                | Applies to subpart R | Comment  |
|--------------------------|----------------------|--|
| 63.6(f)(1) .....         | Yes                  | Subpart R does not require COMS  |
| 63.6(f)(2) .....         | Yes                  |  |
| 63.6(f)(3) .....         | Yes                  |  |
| 63.6(g) .....            | Yes                  |  |
| 63.6(h) .....            | No                   | Section reserved   |
| 63.6(i)(1)–(i)(14) ..... | Yes                  |  |
| 63.6(i)(15) .....        | No                   |  |
| 63.6(i)(16) .....        | Yes                  |  |
| 63.6(j) .....            | Yes                  |  |
| 63.7(a)(1) .....         | Yes                  |  |
| 63.7(a)(2) .....         | Yes                  |  |
| 63.7(a)(3) .....         | Yes                  |  |
| 63.7(b) .....            | Yes                  |  |
| 63.7(c) .....            | Yes                  |  |
| 63.7(d) .....            | Yes                  |  |
| 63.7(e)(1) .....         | Yes                  |  |
| 63.7(e)(2) .....         | Yes                  |  |
| 63.7(e)(3) .....         | Yes                  |  |
| 63.7(e)(4) .....         | Yes                  |  |
| 63.7(f) .....            | Yes                  |  |
| 63.7(g) .....            | Yes                  |  |
| 63.7(h) .....            | Yes                  |  |
| 63.8(a)(1) .....         | Yes                  | Section reserved   |
| 63.8(a)(2) .....         | Yes                  |  |
| 63.8(a)(3) .....         | No                   |  |
| 63.8(a)(4) .....         | Yes                  |  |
| 63.8(b)(1) .....         | Yes                  |  |
| 63.8(b)(2) .....         | Yes                  |  |
| 63.8(b)(3) .....         | Yes                  |  |
| 63.8(c)(1) .....         | Yes                  |  |
| 63.8(c)(2) .....         | Yes                  |  |
| 63.8(c)(3) .....         | Yes                  |  |
| 63.8(c)(4) .....         | Yes                  |  |
| 63.8(c)(5) .....         | No                   | Subpart R does not require COMS  |
| 63.8(c)(6)–(c)(8) .....  | Yes                  |  |
| 63.8(d) .....            | Yes                  |  |
| 63.8(e) .....            | Yes                  |  |
| 63.8(f)(1)–(f)(5) .....  | Yes                  |  |
| 63.8(f)(6) .....         | Yes                  |  |
| 63.8(g) .....            | Yes                  |  |
| 63.9(a) .....            | Yes                  |  |
| 63.9(b)(1) .....         | Yes                  |  |
| 63.9(b)(2) .....         | No                   |  |
| 63.9(b)(3) .....         | Yes                  | Subpart R allows additional time for existing sources to submit initial notification. Sec. 63.428(a) specifies submittal by 1 year after being subject to the rule or December 16, 1996, whichever is later. |
| 63.9(b)(4) .....         | Yes                  |  |
| 63.9(b)(5) .....         | Yes                  |  |
| 63.9(c) .....            | Yes                  |  |
| 63.9(d) .....            | Yes                  |  |
| 63.9(e) .....            | Yes                  |  |
| 63.9(f) .....            | Yes                  |  |
| 63.9(g) .....            | Yes                  |  |
| 63.9(h)(1)–(h)(3) .....  | Yes                  |  |
| 63.9(h)(4) .....         | No                   |  |
| 63.9(h)(5)–(h)(6) .....  | Yes                  | Section reserved   |
| 63.9(i) .....            | Yes                  |  |
| 63.9(j) .....            | Yes                  |  |
| 63.10(a) .....           | Yes                  |  |
| 63.10(b)(1) .....        | Yes                  |  |
| 63.10(b)(2) .....        | Yes                  |  |
| 63.10(b)(3) .....        | Yes                  |  |
| 63.10(c)(1) .....        | Yes                  |  |
| 63.10(c)(2)–(c)(4) ..... | No                   |  |

TABLE 1 TO SUBPART R—GENERAL PROVISIONS APPLICABILITY TO SUBPART R—Continued

| Reference                | Applies to subpart R | Comment          |
|--------------------------|----------------------|------------------|
| 63.10(c)(5)–(c)(8) ..... | Yes                  | Section reserved |
| 63.10(c)(9) .....        | No                   |                  |
| 63.10(c)(5)–(c)(8) ..... | Yes                  |                  |
| 63.10(d)(1) .....        | Yes                  |                  |
| 63.10(d)(2) .....        | Yes                  |                  |
| 63.10(d)(3) .....        | Yes                  |                  |
| 63.10(d)(4) .....        | Yes                  |                  |
| 63.10(d)(5) .....        | Yes                  |                  |
| 63.10(e) .....           | Yes                  |                  |
| 63.10(f) .....           | Yes                  |                  |
| 63.11(a)–(b) .....       | Yes                  |                  |
| 63.12(a)–(c) .....       | Yes                  |                  |
| 63.13(a)–(c) .....       | Yes                  |                  |
| 63.14(a)–(b) .....       | Yes                  |                  |
| 63.15(a)–(b) .....       | Yes                  |                  |

[59 FR 64318, Dec. 14, 1994, as amended at 61 FR 7724, Feb. 29, 1996]

**Subpart S—[Reserved]**

**Subpart T—National Emission Standards for Halogenated Solvent Cleaning**

SOURCE: 59 FR 61805, Dec. 2, 1994, unless otherwise noted.

**§ 63.460 Applicability and designation of source.**

(a) The provisions of this subpart apply to each individual batch vapor, in-line vapor, in-line cold, and batch cold solvent cleaning machine that uses any solvent containing methylene chloride (CAS No. 75-09-2), perchloroethylene (CAS No. 127-18-4), trichloroethylene (CAS No. 79-01-6), 1,1,1-trichloroethane (CAS No. 71-55-6), carbon tetrachloride (CAS No. 56-23-5) or chloroform (CAS No. 67-66-3), or any combination of these halogenated HAP solvents, in a total concentration greater than 5 percent by weight, as a cleaning and/or drying agent. The concentration of these solvents may be determined using EPA test method 18, material safety data sheets, or engineering calculations. Wipe cleaning activities, such as using a rag containing halogenated solvent or a spray cleaner containing halogenated solvent are not covered under the provisions of this subpart.

(b) Except as noted in appendix C (General Provisions Applicability to

Subpart T) of this subpart, the provisions of subpart A of this part (General Provisions) apply to owners or operators of any solvent cleaning machine meeting the applicability criteria of paragraph (a) of this section.

(c) Each solvent cleaning machine subject to this subpart that commences construction or reconstruction after November 29, 1993, shall achieve compliance with the provisions of this subpart immediately upon startup or by December 2, 1994, whichever is later.

(d) Each solvent cleaning machine subject to this subpart that commenced construction or reconstruction on or before November 29, 1993, shall achieve compliance with the provisions of this subpart no later than December 2, 1997. Except that, any machine that commences construction or reconstruction on or before November 29, 1993, that does not use halogenated hazardous air pollutant (HAP) solvent on December 2, 1994, shall, if the machine begins use of halogenated HAP solvent after December 2, 1994, achieve compliance with the provisions of this subpart no later than December 2, 1997, or 60 days after commencing use of halogenated HAP solvent covered under this subpart whichever is later.

(e) In delegating implementation and enforcement authority to a State under section 112(d) of the Act, the authority contained in paragraph (f) of this section shall be retained by the Administrator and not transferred to a State.

(f) The authority conferred in § 63.463(d)(9) and § 63.469 will not be delegated to any State.

[59 FR 61805, Dec. 2, 1994; 59 FR 67750, Dec. 30, 1994; 60 FR 29485, June 5, 1995]

#### § 63.461 Definitions.

Unless defined below, all terms used in this subpart are used as defined in the 1990 Clean Air Act, or in subpart A of 40 CFR part 63:

*Administrator* means the Administrator of the United States Environmental Protection Agency or his or her authorized representative (e.g., State that has been delegated the authority to implement the provisions of this part.)

*Air blanket* means the layer of air inside the solvent cleaning machine freeboard located above the solvent/air interface. The centerline of the air blanket is equidistant between the sides of the machine.

*Automated parts handling system* means a mechanical device that carries all parts and parts baskets at a controlled speed from the initial loading of soiled or wet parts through the removal of the cleaned or dried parts. Automated parts handling systems include, but are not limited to, hoists and conveyors.

*Batch cleaning machine* means a solvent cleaning machine in which individual parts or a set of parts move through the entire cleaning cycle before new parts are introduced into the solvent cleaning machine. An open-top vapor cleaning machine is a type of batch cleaning machine. A solvent cleaning machine, such as a ferris wheel or a cross-rod degreaser, that clean multiple batch loads simultaneously and are manually loaded are batch cleaning machines.

*Carbon adsorber* means a bed of activated carbon into which an air-solvent gas-vapor stream is routed and which adsorbs the solvent on the carbon.

*Clean liquid solvent* means fresh unused solvent, recycled solvent, or used solvent that has been cleaned of soils (e.g., skimmed of oils or sludge and strained of metal chips).

*Cleaning capacity* means, for a cleaning machine without a solvent/air interface, the maximum volume of parts that can be cleaned at one time.

In most cases, the cleaning capacity is equal to the volume (length times width times height) of the cleaning chamber.

*Cold cleaning machine* means any device or piece of equipment that contains and/or uses liquid solvent, into which parts are placed to remove soils from the surfaces of the parts or to dry the parts. Cleaning machines that contain and use heated, nonboiling solvent to clean the parts are classified as cold cleaning machines.

*Consumption* means the amount of halogenated hazardous air pollutant solvent added to the solvent cleaning machine.

*Cover* means a lid, top, or portal cover that shields the solvent cleaning machine openings from air disturbances when in place and is designed to be easily opened and closed without disturbing the vapor zone. Air disturbances include, but are not limited to, lip exhausts, ventilation fans, and general room drafts. Types of covers include, but are not limited to, sliding, biparting, and rolltop covers.

*Cross-rod solvent cleaning machine* means a batch solvent cleaning machine in which parts baskets are suspended from "cross-rods" as they are moved through the machine. In a cross-rod cleaning machine, parts are loaded semi-continuously, and enter and exit the machine from a single portal.

*Downtime mode* means the time period when a solvent cleaning machine is not cleaning parts and the sump heating coils, if present, are turned off.

*Dwell* means the technique of holding parts within the freeboard area but above the vapor zone of the solvent cleaning machine. Dwell occurs after cleaning to allow solvent to drain from the parts or parts baskets back into the solvent cleaning machine.

*Dwell time* means the required minimum length of time that a part must dwell, as determined by § 63.465(d).

*Emissions* means halogenated hazardous air pollutant solvent consumed (i.e., halogenated hazardous air pollutant solvent added to the machine) minus the liquid halogenated hazardous air pollutant solvent removed from the machine and the halogenated hazardous air pollutant solvent removed from the machine in the solid waste.

*Existing* means any solvent cleaning machine the construction or reconstruction of which was commenced on or before November 29, 1993. A machine, the construction or reconstruction of which was commenced on or before November 29, 1993, but that did not meet the definition of a solvent cleaning machine on December 2, 1994, because it did not use halogenated HAP solvent liquid or vapor covered under this subpart to remove soils, becomes an existing source when it commences to use such liquid or vapor. A solvent cleaning machine moved within a contiguous facility or to another facility under the same ownership, constitutes an existing machine.

*Freeboard area* means; for a batch cleaning machine, the area within the solvent cleaning machine that extends from the solvent/air interface to the top of the solvent cleaning machine; for an in-line cleaning machine, it is the area within the solvent cleaning machine that extends from the solvent/air interface to the bottom of the entrance or exit opening, whichever is lower.

*Freeboard height* means; for a batch cleaning machine, the distance from the solvent/air interface, as measured during the idling mode, to the top of the cleaning machine; for an in-line cleaning machine, it is the distance from the solvent/air interface to the bottom of the entrance or exit opening, whichever is lower, as measured during the idling mode.

*Freeboard ratio* means the ratio of the solvent cleaning machine freeboard height to the smaller interior dimension (length, width, or diameter) of the solvent cleaning machine.

*Freeboard refrigeration device (also called a chiller)* means a set of secondary coils mounted in the freeboard area that carries a refrigerant or other chilled substance to provide a chilled air blanket above the solvent vapor. A primary condenser capable of meeting the requirements of § 63.463(e)(2)(i) is defined as both a freeboard refrigeration device and a primary condenser for the purposes of these standards.

*Halogenated hazardous air pollutant solvent or halogenated HAP solvent* means methylene chloride (CAS No. 75-09-2), perchloroethylene (CAS No. 127-

18-4), trichloroethylene (CAS No. 79-01-6), 1,1,1-trichloroethane (CAS No. 71-55-6), carbon tetrachloride (CAS No. 56-23-5), and chloroform (CAS No. 67-66-3).

*Hoist* means a mechanical device that carries the parts basket and the parts to be cleaned from the loading area into the solvent cleaning machine and to the unloading area at a controlled speed. A hoist may be operated by controls or may be programmed to cycle parts through the cleaning cycle automatically.

*Idling mode* means the time period when a solvent cleaning machine is not actively cleaning parts and the sump heating coils, if present, are turned on.

*Idling-mode cover* means any cover or solvent cleaning machine design that allows the cover to shield the cleaning machine openings during the idling mode. A cover that meets this definition can also be used as a working-mode cover if that definition is also met.

*Immersion cold cleaning machine* means a cold cleaning machine in which the parts are immersed in the solvent when being cleaned. A remote reservoir cold cleaning machine that is also an immersion cold cleaning machine is considered an immersion cold cleaning machine for purposes of this subpart.

*In-line cleaning machine or continuous cleaning machine* means a solvent cleaning machine that uses an automated parts handling system, typically a conveyor, to automatically provide a continuous supply of parts to be cleaned. These units are fully enclosed except for the conveyor inlet and exit portals. In-line cleaning machines can be either cold or vapor cleaning machines.

*Leak-proof coupling* means a threaded or other type of coupling that prevents solvents from leaking while filling or draining solvent to and from the solvent cleaning machine.

*Lip exhaust* means a device installed at the top of the opening of a solvent cleaning machine that draws in air and solvent vapor from the freeboard area and ducts the air and vapor away from the solvent cleaning area.

*Monthly reporting period* means any calendar month in which the owner or operator of a solvent cleaning machine is required to calculate and report the

solvent emissions from each solvent cleaning machine.

*New* means any solvent cleaning machine the construction or reconstruction of which is commenced after November 29, 1993.

*Open-top vapor cleaning machine* means a batch solvent cleaning machine that has its upper surface open to the air and boils solvent to create solvent vapor used to clean and/or dry parts.

*Part* means any object that is cleaned in a solvent cleaning machine. Parts include, but are not limited to, discrete parts, assemblies, sets of parts, and continuous parts (i.e., continuous sheets of metal).

*Primary condenser* means a series of circumferential cooling coils on a vapor cleaning machine through which a chilled substance is circulated or recirculated to provide continuous condensation of rising solvent vapors and, thereby, create a concentrated solvent vapor zone.

*Reduced room draft* means decreasing the flow or movement of air across the top of the freeboard area of the solvent cleaning machine to meet the specifications of § 63.463(e)(2)(ii). Methods of achieving a reduced room draft include, but are not limited to, redirecting fans and/or air vents to not blow across the cleaning machine, moving the cleaning machine to a corner where there is less room draft, and constructing a partial or complete enclosure around the cleaning machine.

*Remote reservoir cold cleaning machine* means any device in which liquid solvent is pumped to a sink-like work area that drains solvent back into an enclosed container while parts are being cleaned, allowing no solvent to pool in the work area.

*Soils* means contaminants that are removed from the parts being cleaned. Soils include, but are not limited to, grease, oils, waxes, metal chips, carbon deposits, fluxes, and tars.

*Solvent/air interface* means, for a vapor cleaning machine, the location of contact between the concentrated solvent vapor layer and the air. This location of contact is defined as the mid-line height of the primary condenser coils. For a cold cleaning ma-

chine, it is the location of contact between the liquid solvent and the air.

*Solvent/air interface area* means; for a vapor cleaning machine, the surface area of the solvent vapor zone that is exposed to the air; for an in-line cleaning machine, it is the total surface area of all the sumps; for a cold cleaning machine, it is the surface area of the liquid solvent that is exposed to the air.

*Solvent cleaning machine* means any device or piece of equipment that uses halogenated HAP solvent liquid or vapor to remove soils from the surfaces of materials. Types of solvent cleaning machines include, but are not limited to, batch vapor, in-line vapor, in-line cold, and batch cold solvent cleaning machines. Buckets, pails, and beakers with capacities of 7.6 liters (2 gallons) or less are not considered solvent cleaning machines.

*Solvent vapor zone* means; for a vapor cleaning machine, the area that extends from the liquid solvent surface to the level that solvent vapor is condensed. This condensation level is defined as the midline height of the primary condenser coils.

*Sump* means the part of a solvent cleaning machine where the liquid solvent is located.

*Sump heater coils* means the heating system on a cleaning machine that uses steam, electricity, or hot water to heat or boil the liquid solvent.

*Superheated vapor system* means a system that heats the solvent vapor, either passively or actively, to a temperature above the solvent's boiling point. Parts are held in the superheated vapor before exiting the machine to evaporate the liquid solvent on them. Hot vapor recycle is an example of a superheated vapor system.

*Vapor cleaning machine* means a batch or in-line solvent cleaning machine that boils liquid solvent generating solvent vapor that is used as a part of the cleaning or drying cycle.

*Water layer* means a layer of water that floats above the denser solvent and provides control of solvent emissions. In many cases, the solvent used in batch cold cleaning machines is sold containing the appropriate amount of water to create a water cover.

*Working mode* means the time period when the solvent cleaning machine is actively cleaning parts.

*Working-mode cover* means any cover or solvent cleaning machine design that allows the cover to shield the cleaning machine openings from outside air disturbances while parts are being cleaned in the cleaning machine. A cover that is used during the working mode is opened only during parts entry and removal. A cover that meets this definition can also be used as an idling-mode cover if that definition is also met.

[59 FR 61805, Dec. 2, 1994; 60 FR 29485, June 5, 1995]

**§ 63.462 Batch cold cleaning machine standards.**

(a) Each owner or operator of an immersion batch cold solvent cleaning machine shall comply with the requirements specified in paragraph (a)(1) or (a)(2) of this section.

(1) Employ a tightly fitting cover that shall be closed at all times except during parts entry and removal, and a water layer at a minimum thickness of 2.5 centimeters (1.0 inch) on the surface of the solvent within the cleaning machine, or

(2) Employ a tightly fitting cover that shall be closed at all times except during parts entry and removal and a freeboard ratio of 0.75 or greater.

(b) Each owner or operator of a remote-reservoir batch cold solvent cleaning machine shall employ a tightly fitting cover over the solvent sump that shall be closed at all times except during the cleaning of parts.

(c) Each owner or operator of a batch cold solvent cleaning machine complying with paragraphs (a)(2) or (b) of this section shall comply with the work and operational practice requirements specified in paragraphs (c)(1) through (c)(8) of this section.

(1) All waste solvent shall be collected and stored in closed containers. The closed container may contain a device that allows pressure relief, but does not allow liquid solvent to drain from the container.

(2) If a flexible hose or flushing device is used, flushing shall be performed only within the freeboard area of the solvent cleaning machine.

(3) The owner or operator shall drain solvent cleaned parts for 15 seconds or until dripping has stopped, whichever is longer. Parts having cavities or blind holes shall be tipped or rotated while draining.

(4) The owner or operator shall ensure that the solvent level does not exceed the fill line.

(5) Spills during solvent transfer shall be wiped up immediately. The wipe rags shall be stored in covered containers meeting the requirements of paragraph (c)(1) of this section.

(6) When an air- or pump-agitated solvent bath is used, the owner or operator shall ensure that the agitator is operated to produce a rolling motion of the solvent but not observable splashing against tank walls or parts being cleaned.

(7) The owner or operator shall ensure that, when the cover is open, the cold cleaning machine is not exposed to drafts greater than 40 meters per minute (132 feet per minute), as measured between 1 and 2 meters (3.3 and 6.6 feet) upwind and at the same elevation as the tank lip.

(8) Sponges, fabric, wood, and paper products shall not be cleaned.

(d) Each owner or operator of a batch cold cleaning machine shall submit an initial notification report as described in § 63.468 (a) and (b) and a compliance report as described in § 63.468(c).

[59 FR 61805, Dec. 2, 1994; 60 FR 29485, June 5, 1995]

**§ 63.463 Batch vapor and in-line cleaning machine standards.**

(a) Except as provided in § 63.464, each owner or operator of a solvent cleaning machine subject to the provisions of this subpart shall ensure that each existing or new batch vapor or in-line solvent cleaning machine subject to the provisions of this subpart conforms to the design requirements specified in paragraphs (a)(1) through (a)(7) of this section.

(1) Each cleaning machine shall be designed or operated to meet the control equipment or technique requirements in paragraph (a)(1)(i) or (a)(1)(ii) of this section.

(i) An idling and downtime mode cover, as described in § 63.463(d)(1)(i), that may be readily opened or closed,

that completely covers the cleaning machine openings when in place, and is free of cracks, holes, and other defects.

(ii) A reduced room draft as described in §63.463(e)(2)(ii).

(2) Each cleaning machine shall have a freeboard ratio of 0.75 or greater.

(3) Each cleaning machine shall have an automated parts handling system capable of moving parts or parts baskets at a speed of 3.4 meters per minute (11 feet per minute) or less from the initial loading of parts through removal of cleaned parts.

(4) Each vapor cleaning machine shall be equipped with a device that shuts off the sump heat if the sump liquid solvent level drops to the sump heater coils.

(5) Each vapor cleaning machine shall be equipped with a vapor level control device that shuts off sump heat if the vapor level in the vapor cleaning machine rises above the height of the primary condenser.

(6) Each vapor cleaning machine shall have a primary condenser.

(7) Each cleaning machine that uses a lip exhaust shall be designed and operated to route all collected solvent vapors through a properly operated and maintained carbon adsorber that meets the requirements of paragraph (e)(2)(vii) of this section.

(b) Except as provided in §63.464, each owner or operator of an existing or new batch vapor cleaning machine shall comply with either paragraph (b)(1) or (b)(2) of this section.

(1) Each owner or operator of a batch vapor cleaning machine with a solvent/air interface area of 1.21 square meters (13 square feet) or less shall comply with the requirements specified in either paragraph (b)(1)(i) or (b)(1)(ii) of this section.

(i) Employ one of the control combinations listed in table 1 of this subpart or other equivalent methods of control as determined using the procedure in §63.469, equivalent methods of control.

TABLE 1—CONTROL COMBINATIONS FOR BATCH VAPOR SOLVENT CLEANING MACHINES WITH A SOLVENT/AIR INTERFACE AREA OF 1.21 SQUARE METERS (13 SQUARE FEET) OR LESS

| Option   | Control combinations   |
|----------|--|
| 1 .....  | Working-mode cover, freeboard ratio of 1.0, superheated vapor. |
| 2 .....  | Freeboard refrigeration device, superheated vapor.             |
| 3 .....  | Working-mode cover, freeboard refrigeration device.            |
| 4 .....  | Reduced room draft, freeboard ratio of 1.0, superheated vapor. |
| 5 .....  | Freeboard refrigeration device, reduced room draft.            |
| 6 .....  | Freeboard refrigeration device, freeboard ratio of 1.0.        |
| 7 .....  | Freeboard refrigeration device, dwell.                         |
| 8 .....  | Reduced room draft, dwell, freeboard ratio of 1.0.             |
| 9 .....  | Freeboard refrigeration device, carbon adsorber.               |
| 10 ..... | Freeboard ratio of 1.0, superheated vapor, carbon adsorber.    |

**Note:** Unlike most of the control techniques available for complying with this rule, carbon adsorbers are not considered to be a pollution prevention measure. Use of such units may impose additional cost and burden for a number of reasons. First, carbon adsorption units are generally more expensive than other controls listed in the options. Second, these units may present cross-media impacts such as effluent discharges if not properly operated and maintained, and spent carbon beds have to be disposed of as hazardous waste. When making decisions about what controls to install on halogenated solvent cleaning machines to meet the requirements of this rule, all of these factors should be weighed and pollution prevention measures are encouraged wherever possible.

(ii) Demonstrate that their solvent cleaning machine can achieve and maintain an idling emission limit of 0.22 kilograms per hour per square meter (0.045 pounds per hour per square foot) of solvent/air interface area as determined using the procedures in §63.465(a) and appendix A to this part.

(2) Each owner or operator of a batch vapor cleaning machine with a solvent/air interface area greater than 1.21 square meters (13 square feet) shall comply with the requirements specified in either paragraph (b)(2)(i) or (b)(2)(ii) of this section.

(i) Employ one of the control combinations listed in table 2 of this subpart or other equivalent methods of control as determined using the procedure in §63.469, equivalent methods of control.

TABLE 2—CONTROL COMBINATIONS FOR BATCH VAPOR SOLVENT CLEANING MACHINES WITH A SOLVENT/AIR INTERFACE AREA GREATER THAN 1.21 SQUARE METERS (13 SQUARE FEET)

| Option  | Control combinations  |
|---------|---|
| 1 ..... | Freeboard refrigeration device, freeboard ratio of 1.0, superheated vapor.  |
| 2 ..... | Dwell, freeboard refrigeration device, reduced room draft.                  |
| 3 ..... | Working-mode cover, freeboard refrigeration device, superheated vapor.      |
| 4 ..... | Freeboard ratio of 1.0, reduced room draft, superheated vapor.              |
| 5 ..... | Freeboard refrigeration device, reduced room draft, superheated vapor.      |
| 6 ..... | Freeboard refrigeration device, reduced room draft, freeboard ratio of 1.0. |
| 7 ..... | Freeboard refrigeration device, superheated vapor, carbon adsorber.         |

**Note:** Unlike most of the control techniques available for complying with this rule, carbon adsorbers are not considered to be a pollution prevention measure. Use of such units may impose additional cost and burden for a number of reasons. First, carbon adsorption units are generally more expensive than other controls listed in the options. Second, these units may present cross-media impacts such as effluent discharges if not properly operated and maintained, and spent carbon beds have to be disposed of as hazardous waste. When making decisions about what controls to install on halogenated solvent cleaning machines to meet the requirements of this rule, all of these factors should be weighed and pollution prevention measures are encouraged wherever possible.

(ii) Demonstrate that their solvent cleaning machine can achieve and maintain an idling emission limit of 0.22 kilograms per hour per square meter (0.045 pounds per hour per square foot) of solvent/air interface area as determined using the procedures in §63.465(a) and appendix A of this part.

(c) Except as provided in §63.464, each owner or operator of an in-line cleaning machine shall comply with paragraph (c)(1) or (c)(2) of this section as appropriate.

(1) Each owner or operator of an existing in-line cleaning machine shall comply with the requirements specified in either paragraph (c)(1)(i) or (c)(1)(ii) of this section.

(i) Employ one of the control combinations listed in table 3 of this subpart or other equivalent methods of control as determined using the procedure in §63.469, equivalent methods of control.

TABLE 3—CONTROL COMBINATIONS FOR EXISTING IN-LINE SOLVENT CLEANING MACHINES

| Option  | Control combinations                                    |
|---------|---|
| 1 ..... | Superheated vapor, freeboard ratio of 1.0.              |
| 2 ..... | Freeboard refrigeration device, freeboard ratio of 1.0. |

TABLE 3—CONTROL COMBINATIONS FOR EXISTING IN-LINE SOLVENT CLEANING MACHINES—Continued

| Option  | Control combinations                   |
|---------|--|
| 3 ..... | Dwell, freeboard refrigeration device. |
| 4 ..... | Dwell, carbon adsorber.                |

**Note:** Unlike most of the control techniques available for complying with this rule, carbon adsorbers are not considered to be a pollution prevention measure. Use of such units may impose additional cost and burden for a number of reasons. First, carbon adsorption units are generally more expensive than other controls listed in the options. Second, these units may present cross-media impacts such as effluent discharges if not properly operated and maintained, and spent carbon beds have to be disposed of as hazardous waste. When making decisions about what controls to install on halogenated solvent cleaning machines to meet the requirements of this rule, all of these factors should be weighed and pollution prevention measures are encouraged wherever possible.

(ii) Demonstrate that their solvent cleaning machine can achieve and maintain an idling emission limit of 0.10 kilograms per hour per square meter (0.021 pounds per hour per square foot) of solvent/air interface area as determined using the procedures in §63.465(a) and appendix A to this part.

(2) Each owner or operator of a new in-line cleaning machine shall comply with the requirements specified in either paragraph (c)(2)(i) or (c)(2)(ii) of this section.

(i) Employ one of the control combinations listed in table 4 of this subpart or other equivalent methods of control as determined using the procedure in §63.469, equivalent methods of control section.

TABLE 4—CONTROL COMBINATIONS FOR NEW IN-LINE SOLVENT CLEANING MACHINES

| Option  | Control combinations                               |
|---------|--|
| 1 ..... | Superheated vapor, freeboard refrigeration device. |
| 2 ..... | Freeboard refrigeration device, carbon adsorber.   |
| 3 ..... | Superheated vapor, carbon adsorber.                |

**Note:** Unlike most of the control techniques available for complying with this rule, carbon adsorbers are not considered to be a pollution prevention measure. Use of such units may impose additional cost and burden for a number of reasons. First, carbon adsorption units are generally more expensive than other controls listed in the options. Second, these units may present cross-media impacts such as effluent discharges if not properly operated and maintained, and spent carbon beds have to be disposed of as hazardous waste. When making decisions about what controls to install on halogenated solvent cleaning machines to meet the requirements of this rule, all of these factors should be weighed and pollution prevention measures are encouraged wherever possible.

(ii) Demonstrate that their solvent cleaning machine can achieve and maintain an idling emission limit of 0.10 kilograms per hour per square meter (0.021 pounds per hour per square

foot) of solvent/air interface area as determined using the procedures in § 63.465(a) and appendix A to this part.

(d) Except as provided in § 63.464, each owner or operator of an existing or new batch vapor or in-line solvent cleaning machine shall meet all of the following required work and operational practices specified in paragraph (d)(1) through (d)(12) of this section as applicable.

(1) Control air disturbances across the cleaning machine opening(s) by incorporating the control equipment or techniques in paragraph (d)(1)(i) or (d)(1)(ii) of this section.

(i) Cover(s) to each solvent cleaning machine shall be in place during the idling mode, and during the downtime mode unless either the solvent has been removed from the machine or maintenance or monitoring is being performed that requires the cover(s) to not be in place.

(ii) A reduced room draft as described in § 63.463(e)(2)(ii).

(2) The parts baskets or the parts being cleaned in an open-top batch vapor cleaning machine shall not occupy more than 50 percent of the solvent/air interface area unless the parts baskets or parts are introduced at a speed of 0.9 meters per minute (3 feet per minute) or less.

(3) Any spraying operations shall be done within the vapor zone or within a section of the solvent cleaning machine that is not directly exposed to the ambient air (i.e., a baffled or enclosed area of the solvent cleaning machine).

(4) Parts shall be oriented so that the solvent drains from them freely. Parts having cavities or blind holes shall be tipped or rotated before being removed from any solvent cleaning machine unless an equally effective approach has been approved by the Administrator.

(5) Parts baskets or parts shall not be removed from any solvent cleaning machine until dripping has stopped.

(6) During startup of each vapor cleaning machine, the primary condenser shall be turned on before the sump heater.

(7) During shutdown of each vapor cleaning machine, the sump heater shall be turned off and the solvent

vapor layer allowed to collapse before the primary condenser is turned off.

(8) When solvent is added or drained from any solvent cleaning machine, the solvent shall be transferred using threaded or other leakproof couplings and the end of the pipe in the solvent sump shall be located beneath the liquid solvent surface.

(9) Each solvent cleaning machine and associated controls shall be maintained as recommended by the manufacturers of the equipment or using alternative maintenance practices that have been demonstrated to the Administrator's satisfaction to achieve the same or better results as those recommended by the manufacturer.

(10) Each operator of a solvent cleaning machine shall complete and pass the applicable sections of the test of solvent cleaning operating procedures in appendix B to this part if requested during an inspection by the Administrator.

(11) Waste solvent, still bottoms, and sump bottoms shall be collected and stored in closed containers. The closed containers may contain a device that would allow pressure relief, but would not allow liquid solvent to drain from the container.

(12) Sponges, fabric, wood, and paper products shall not be cleaned.

(e) Each owner or operator of a solvent cleaning machine complying with either paragraph (b) or (c) of this section shall comply with the requirements specified in paragraphs (e)(1) through (e)(4) of this section.

(1) Conduct monitoring of each control device used to comply with § 63.463 of this subpart as provided in § 63.466.

(2) Determine during each monitoring period whether each control device used to comply with these standards meets the requirements specified in paragraphs (e)(2)(i) through (e)(2)(vii) of this section.

(i) If a freeboard refrigeration device is used to comply with these standards, the owner or operator shall ensure that the chilled air blanket temperature (in °F), measured at the center of the air blanket, is no greater than 30 percent of the solvent's boiling point.

(ii) If a reduced room draft is used to comply with these standards, the owner or operator shall comply with

the requirements specified in paragraphs (e)(2)(ii)(A) and (e)(2)(ii)(B) of this section.

(A) Ensure that the flow or movement of air across the top of the freeboard area of the solvent cleaning machine or within the solvent cleaning machine enclosure does not exceed 15.2 meters per minute (50 feet per minute) at any time as measured using the procedures in § 63.466(d).

(B) Establish and maintain the operating conditions under which the wind speed was demonstrated to be 15.2 meters per minute (50 feet per minute) or less as described in § 63.466(d).

(iii) If a working-mode cover is used to comply with these standards, the owner or operator shall comply with the requirements specified in paragraphs (e)(2)(iii)(A) and (e)(2)(iii)(B) of this section.

(A) Ensure that the cover opens only for part entrance and removal and completely covers the cleaning machine openings when closed.

(B) Ensure that the working-mode cover is maintained free of cracks, holes, and other defects.

(iv) If an idling-mode cover is used to comply with these standards, the owner or operator shall comply with the requirements specified in paragraphs (e)(2)(iv)(A) and (e)(2)(iv)(B) of this section.

(A) Ensure that the cover is in place whenever parts are not in the solvent cleaning machine and completely covers the cleaning machine openings when in place.

(B) Ensure that the idling-mode cover is maintained free of cracks, holes, and other defects.

(v) If a dwell is used to comply with these standards, the owner or operator shall comply with the requirements specified in paragraphs (e)(2)(v)(A) and (e)(2)(v)(B) of this section.

(A) Determine the appropriate dwell time for each type of part or parts basket, or determine the maximum dwell time using the most complex part type or parts basket, as described in § 63.465(d).

(B) Ensure that, after cleaning, each part is held in the solvent cleaning machine freeboard area above the vapor zone for the dwell time determined for that particular part or parts basket, or

for the maximum dwell time determined using the most complex part type or parts basket.

(vi) If a superheated vapor system is used to comply with these standards, the owner or operator shall comply with the requirements specified in paragraphs (e)(2)(vi)(A) through (e)(2)(vi)(C) of this section.

(A) Ensure that the temperature of the solvent vapor at the center of the superheated vapor zone is at least 10°F above the solvent's boiling point.

(B) Ensure that the manufacturer's specifications for determining the minimum proper dwell time within the superheated vapor system is followed.

(C) Ensure that parts remain within the superheated vapor for at least the minimum proper dwell time.

(vii) If a carbon adsorber in conjunction with a lip exhaust is used to comply with these standards, the owner or operator shall comply with the requirements specified in paragraphs (e)(2)(vii)(A) through (e)(2)(vii)(C) of this section.

(A) Ensure that the concentration of organic solvent in the exhaust from this device does not exceed 100 parts per million of any halogenated HAP compound as measured using the procedure in § 63.466(e). If the halogenated HAP solvent concentration in the carbon adsorber exhaust exceeds 100 parts per million, the owner or operator shall adjust the desorption schedule or replace the disposable canister, if not a regenerative system, so that the exhaust concentration of halogenated HAP solvent is brought below 100 parts per million.

(B) Ensure that the carbon adsorber bed is not bypassed during desorption.

(C) Ensure that the lip exhaust is located above the solvent cleaning machine cover so that the cover closes below the lip exhaust level.

(3) If any of the requirements of paragraph (e)(2) of this section are not met, determine whether an exceedance has occurred using the criteria in paragraphs (e)(3)(i) and (e)(3)(ii) of this section.

(i) An exceedance has occurred if the requirements of paragraphs (e)(2)(ii)(B), (e)(2)(iii)(A), (e)(2)(iv)(A), (e)(2)(v), (e)(2)(vi)(B), (e)(2)(vi)(C),

(e)(2)(vii)(B), or (e)(2)(vii)(C) of this section have not been met.

(ii) An exceedance has occurred if the requirements of paragraphs (e)(2)(i), (e)(2)(ii)(A), (e)(2)(iii)(B), (e)(2)(iv)(B), (e)(2)(vi)(A), or (e)(2)(vii)(A) of this section have not been met and are not corrected within 15 days of detection. Adjustments or repairs shall be made to the solvent cleaning system or control device to reestablish required levels. The parameter must be remeasured immediately upon adjustment or repair and demonstrated to be within required limits.

(4) The owner or operator shall report all exceedances and all corrections and adjustments made to avoid an exceedance as specified in § 63.468(h).

(f) Each owner or operator of a batch vapor or in-line solvent cleaning machine complying with the idling emission limit standards in paragraphs (b)(1)(ii), (b)(2)(ii), (c)(1)(ii), or (c)(2)(ii) of this section shall comply with the requirements specified in paragraphs (f)(1) through (f)(5) of this section.

(1) Conduct an initial performance test to comply with the requirements specified in paragraphs (f)(1)(i) and (f)(1)(ii) of this section.

(i) Demonstrate compliance with the applicable idling emission limit.

(ii) Establish parameters that will be monitored to demonstrate compliance. If a control device is used that is listed in paragraph (e)(2) of this section, then the requirements for that control device as listed in paragraph (e)(2) of this section shall be used unless the owner or operator can demonstrate to the Administrator's satisfaction that an alternative strategy is equally effective.

(2) Conduct the periodic monitoring of the parameters used to demonstrate compliance as described in § 63.466(f).

(3) Operate the solvent cleaning machine within parameters identified in the initial performance test.

(4) If any of the requirements in paragraphs (f)(1) through (f)(3) of this section are not met, determine whether an exceedance has occurred using the criteria in paragraphs (f)(4)(i) and (f)(4)(ii) of this section.

(i) If using a control listed in paragraph (e) of this section, the owner or operator shall comply with the appropriate parameter values in paragraph (e)(2) and the exceedance delineations in paragraphs (e)(3)(i) and (e)(3)(ii) of this section.

(ii) If using a control not listed in paragraph (e) of this section, the owner or operator shall indicate whether the exceedance of the parameters that are monitored to determine the proper functioning of this control would be classified as an immediate exceedance or whether a 15 day repair period would be allowed. This information must be submitted to the Administrator for approval.

(5) The owner or operator shall report all exceedances and all corrections and adjustments made to avoid an exceedance as specified in § 63.468(h).

[59 FR 61805, Dec. 2, 1994; 60 FR 29485, June 5, 1995]

#### § 63.464 Alternative standards.

(a) As an alternative to meeting the requirements in § 63.463, each owner or operator of a batch vapor or in-line solvent cleaning machine can elect to comply with the requirements of § 63.464. An owner or operator of a solvent cleaning machine who elects to comply with § 63.464 shall comply with the requirements specified in either paragraph (a)(1) or (a)(2) of this section.

(1) If the cleaning machine has a solvent/air interface, as defined in § 63.461, the owner or operator shall comply with the requirements specified in paragraphs (a)(1)(i) and (a)(1)(ii) of this section.

(i) Maintain a log of solvent additions and deletions for each solvent cleaning machine.

(ii) Ensure that the emissions from each solvent cleaning machine are equal to or less than the applicable emission limit presented in table 5 of this subpart as determined using the procedures in § 63.465(b) and (c).

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TABLE 5—EMISSION LIMITS FOR BATCH VAPOR AND IN-LINE SOLVENT CLEANING MACHINES WITH A SOLVENT/AIR INTERFACE

| Solvent cleaning machine                         | 3-month rolling average monthly emission limit (kilograms/square meters/month) |
|--|--|
| Batch vapor solvent cleaning machines .....      | 150  |
| Existing in-line solvent cleaning machines ..... | 153  |
| New in-line solvent cleaning machines .....      | 99   |

(2) If the cleaning machine is a batch vapor cleaning machine and does not have a solvent/air interface, the owner or operator shall comply with the requirements specified in paragraphs (a)(2)(i) and (a)(2)(ii) of this section.

(i) Maintain a log of solvent additions and deletions for each solvent cleaning machine.

(ii) Ensure that the emissions from each solvent cleaning machine are equal to or less than the appropriate limits as described in paragraphs (a)(2)(ii)(A) and (a)(2)(ii)(B) of this section.

(A) For cleaning machines with a cleaning capacity, as reported in § 63.468(d), that is less than or equal to 2.95 cubic meters, the emission limit shall be determined using table 6 or equation 1. If using table 6, and the cleaning capacity of the cleaning machine falls between two cleaning capacity sizes, then the lower of the two emission limits applies.

(B) For cleaning machines with a cleaning capacity as reported in § 63.468(d), that is greater than 2.95 cubic meters, the emission limit shall be determined using equation 1.

$$EL = 330 * (Vol)^{0.6} \quad (1)$$

where:

EL = the 3-month rolling average monthly emission limit (kilograms/month).

TABLE 6—EMISSION LIMITS FOR CLEANING MACHINES WITHOUT A SOLVENT/AIR INTERFACE

| Cleaning capacity (cubic meters) | 3-month rolling average monthly emission limit (kilograms/month) |
|----------------------------------|--|
| 0.00                             | 0  |
| 0.05                             | 55   |
| 0.10                             | 83   |
| 0.15                             | 106  |

TABLE 6—EMISSION LIMITS FOR CLEANING MACHINES WITHOUT A SOLVENT/AIR INTERFACE—Continued

| Cleaning capacity (cubic meters) | 3-month rolling average monthly emission limit (kilograms/month) |
|----------------------------------|--|
| 0.20                             | 126  |
| 0.25                             | 144  |
| 0.30                             | 160  |
| 0.35                             | 176  |
| 0.40                             | 190  |
| 0.45                             | 204  |
| 0.50                             | 218  |
| 0.55                             | 231  |
| 0.60                             | 243  |
| 0.65                             | 255  |
| 0.70                             | 266  |
| 0.75                             | 278  |
| 0.80                             | 289  |
| 0.85                             | 299  |
| 0.90                             | 310  |
| 0.95                             | 320  |
| 1.00                             | 330  |
| 1.05                             | 340  |
| 1.10                             | 349  |
| 1.15                             | 359  |
| 1.20                             | 368  |
| 1.25                             | 377  |
| 1.30                             | 386  |
| 1.35                             | 395  |
| 1.40                             | 404  |
| 1.45                             | 412  |
| 1.50                             | 421  |
| 1.55                             | 429  |
| 1.60                             | 438  |
| 1.65                             | 446  |
| 1.70                             | 454  |
| 1.75                             | 462  |
| 1.80                             | 470  |
| 1.85                             | 477  |
| 1.90                             | 485  |
| 1.95                             | 493  |
| 2.00                             | 500  |
| 2.05                             | 508  |
| 2.10                             | 515  |
| 2.15                             | 522  |
| 2.20                             | 530  |
| 2.25                             | 537  |
| 2.30                             | 544  |
| 2.35                             | 551  |
| 2.40                             | 558  |
| 2.45                             | 565  |
| 2.50                             | 572  |
| 2.55                             | 579  |
| 2.60                             | 585  |
| 2.65                             | 592  |
| 2.70                             | 599  |
| 2.75                             | 605  |
| 2.80                             | 612  |
| 2.85                             | 619  |
| 2.90                             | 625  |
| 2.95                             | 632  |

Vol = the cleaning capacity of the solvent cleaning machine (cubic meters).

(b) Each owner or operator of a batch vapor or in-line solvent cleaning machine complying with § 63.464(a) shall demonstrate compliance with the applicable 3-month rolling average

monthly emission limit on a monthly basis as described in §63.465(b) and (c).

(c) If the applicable 3-month rolling average emission limit is not met, an exceedance has occurred. All exceedances shall be reported as required in §63.468(h).

**§63.465 Test methods.**

(a) Each owner or operator of a batch vapor or in-line solvent cleaning machine complying with an idling emission limit standard in §63.463(b)(1)(ii), (b)(2)(ii), (c)(1)(ii), or (c)(2)(ii) shall determine the idling emission rate of the solvent cleaning machine using Reference Method 307 in appendix A to this part.

(b) Each owner or operator of a batch vapor or in-line solvent cleaning machine complying with §63.464 shall on the first operating day of every month ensure that the solvent cleaning machine system contains only clean liquid solvent. This includes, but is not limited to, fresh unused solvent, recycled solvent and used solvent that has been cleaned of soils. A fill line must be indicated during the first month the measurements are made. The solvent level within the machine must be returned to the same fill-line each month, immediately prior to calculating monthly emissions as specified in §63.465(c). The solvent cleaning machine does not have to be emptied and filled with fresh unused solvent prior to the calculations.

(c) Each owner or operator of a batch vapor or in-line solvent cleaning machine complying with §63.464 shall on the first operating day of the month comply with the requirements specified in paragraphs (c)(1) through (c)(3) of this section.

(1) Using the records of all solvent additions and deletions for the previous monthly reporting period required under §63.464(a), determine solvent emissions (E<sub>i</sub>) using equation 2 for cleaning machines with a solvent/air interface and equation 3 for cleaning machines without a solvent/air interface:

$$E_i = \frac{SA_i - LSR_i - SSR_i}{AREA_i} \quad (2)$$

$$E_n = SA_i - LSR_i - SSR_i \quad (3)$$

where:

E<sub>i</sub>=the total halogenated HAP solvent emissions from the solvent cleaning machine during the most recent monthly reporting period i, (kilograms of solvent per square meter of solvent/air interface area per month).

E<sub>n</sub>=the total halogenated HAP solvent emissions from the solvent cleaning machine during the most recent monthly reporting period i, (kilograms of solvent per month).

SA<sub>i</sub>=the total amount of halogenated HAP liquid solvent added to the solvent cleaning machine during the most recent monthly reporting period i, (kilograms of solvent per month).

LSR<sub>i</sub>=the total amount of halogenated HAP liquid solvent removed from the solvent cleaning machine during the most recent monthly reporting period i, (kilograms of solvent per month).

SSR<sub>i</sub>=the total amount of halogenated HAP solvent removed from the solvent cleaning machine in solid waste, obtained as described in paragraph (c)(2) of this section, during the most recent monthly reporting period i, (kilograms of solvent per month).

AREA<sub>i</sub>=the solvent/air interface area of the solvent cleaning machine (square meters).

(2) Determine SSR<sub>i</sub> using the method specified in paragraph (c)(2)(i) or (c)(2)(ii) of this section.

(i) From tests conducted using EPA reference method 25d.

(ii) By engineering calculations included in the compliance report.

(3) Determine the monthly rolling average, EA, for the 3-month period ending with the most recent reporting period using equation 4 for cleaning machines with a solvent/air interface or equation 5 for cleaning machines without a solvent/air interface:

$$EA_i = \frac{\sum_{j=1}^3 E_i}{3} \quad (4)$$

$$EA_n = \frac{\sum_{j=1}^3 E_n}{3} \quad (5)$$

Where:

EA<sub>i</sub>=the average halogenated HAP solvent emissions over the preceding 3 monthly reporting periods, (kilograms of solvent per square meter of solvent/air interface area per month).

EA<sub>n</sub>=the average halogenated HAP solvent emissions over the preceding 3 monthly reporting periods (kilograms of solvent per month).

E<sub>i</sub>=halogenated HAP solvent emissions for each month (j) for the most recent 3 monthly reporting periods (kilograms of solvent per square meter of solvent/air interface area).

E<sub>n</sub>=halogenated HAP solvent emissions for each month (j) for the most recent 3 monthly reporting periods (kilograms of solvent per month).

j=1 = the most recent monthly reporting period.

j=2 = the monthly reporting period immediately prior to j=1.

j=3 = the monthly reporting period immediately prior to j=2.

(d) Each owner or operator of a batch vapor or in-line solvent cleaning machine using a dwell to comply with §63.463 shall determine the appropriate dwell time for each part or parts basket using the procedure specified in paragraphs (d)(1) and (d)(2) of this section.

(1) Determine the amount of time for the part or parts basket to cease dripping once placed in the vapor zone. The part or parts basket used for this determination must be at room temperature before being placed in the vapor zone.

(2) The proper dwell time for parts to remain in the freeboard area above the vapor zone is no less than 35 percent of the time determined in paragraph (d)(1) of this section.

(e) An owner or operator of a source shall determine their potential to emit from all solvent cleaning operations, using the procedures described in paragraphs (e)(1) through (e)(3) of this section. A facility's total potential to emit is the sum of the HAP emissions from all solvent cleaning operations,

plus all HAP emissions from other sources within the facility.

(1) Determine the potential to emit for each individual solvent cleaning using equation 6.

$$PTE_i = H_i \times W_i \times SAI_i \quad (6)$$

Where:

PTE<sub>i</sub>=the potential to emit for solvent cleaning machine i (kilograms of solvent per year).

H<sub>i</sub>=hours of operation for solvent cleaning machine i (hours per year).

=8760 hours per year, unless otherwise restricted by a Federally enforceable requirement.

W<sub>i</sub>=the working mode uncontrolled emission rate (kilograms per square meter per hour).

=1.95 kilograms per square meter per hour for batch vapor and cold cleaning machines.

=1.12 kilograms per square meter per hour for in-line cleaning machines.

SAI<sub>i</sub> = solvent/air interface area of solvent cleaning machine i (square meters). Section 63.461 defines the solvent/air interface area for those machines that have a solvent/air interface. Cleaning machines that do not have a solvent/air interface shall calculate a solvent/air interface area using the procedure in paragraph (e)(2) of this section.

(2) Cleaning machines that do not have a solvent/air interface shall calculate a solvent/air interface area using equation 7.

$$SAI = 2.20 * (Vol)^{0.6} \quad (7)$$

Where:

SAI=the solvent/air interface area (square meters).

Vol=the cleaning capacity of the solvent cleaning machine (cubic meters).

(3) Sum the PTE<sub>i</sub> for all solvent cleaning operations to obtain the total potential to emit for solvent cleaning operations at the facility.

**§ 63.466 Monitoring procedures.**

(a) Except as provided in paragraph (g) of this section, each owner or operator of a batch vapor or in-line solvent cleaning machine complying with the equipment standards in §63.463 (b)(1)(i), (b)(2)(i), (c)(1)(i), or (c)(2)(i) shall conduct monitoring and record the results

on a weekly basis for the control devices, as appropriate, specified in paragraphs (a)(1) and (a)(2) of this section.

(1) If a freeboard refrigeration device is used to comply with these standards, the owner or operator shall use a thermometer or thermocouple to measure the temperature at the center of the air blanket during the idling mode.

(2) If a superheated vapor system is used to comply with these standards, the owner or operator shall use a thermometer or thermocouple to measure the temperature at the center of the superheated solvent vapor zone while the solvent cleaning machine is in the idling mode.

(b) Except as provided in paragraph (g) of this section, each owner or operator of a batch vapor or in-line solvent cleaning machine complying with the equipment standards of § 63.463 (b)(1)(i), (b)(2)(i), (c)(1)(i), or (c)(2)(i) shall conduct monitoring and record the results on a monthly basis for the control devices, as appropriate, specified in paragraphs (b)(1) and (b)(2) of this section.

(1) If a cover (working-mode, downtime-mode, and/or idling-mode cover) is used to comply with these standards, the owner or operator shall conduct a visual inspection to determine if the cover is opening and closing properly, completely covers the cleaning machine openings when closed, and is free of cracks, holes, and other defects.

(2) If a dwell is used, the owner or operator shall determine the actual dwell time by measuring the period of time that parts are held within the freeboard area of the solvent cleaning machine after cleaning.

(c) Except as provided in paragraph (g) of this section, each owner or operator of a batch vapor or in-line solvent cleaning machine complying with the equipment or idling standards in § 63.463 shall monitor the hoist speed as described in paragraphs (c)(1) through (c)(4) of this section.

(1) The owner or operator shall determine the hoist speed by measuring the time it takes for the hoist to travel a measured distance. The speed is equal to the distance in meters divided by the time in minutes (meters per minute).

(2) The monitoring shall be conducted monthly. If after the first year,

no exceedances of the hoist speed are measured, the owner or operator may begin monitoring the hoist speed quarterly.

(3) If an exceedance of the hoist speed occurs during quarterly monitoring, the monitoring frequency returns to monthly until another year of compliance without an exceedance is demonstrated.

(4) If an owner or operator can demonstrate to the Administrator's satisfaction in the initial compliance report that the hoist cannot exceed a speed of 3.4 meters per minute (11 feet per minute), the required monitoring frequency is quarterly, including during the first year of compliance.

(d) Except as provided in paragraph (g) of this section, each owner or operator of a batch vapor or in-line solvent cleaning machine complying with the equipment standards in § 63.463 (b)(1)(i), (b)(2)(i), (c)(1)(i), or (c)(2)(i) using a reduced room draft shall conduct monitoring and record the results as specified in paragraph (d)(1) or (d)(2) of this section.

(1) If the reduced room draft is maintained by controlling room parameters (i.e., redirecting fans, closing doors and windows, etc.), the owner or operator shall conduct an initial monitoring test of the windspeed and of room parameters, quarterly monitoring of windspeed, and weekly monitoring of room parameters as specified in paragraphs (d)(1)(i) and (d)(1)(ii) of this section.

(i) Measure the windspeed within 6 inches above the top of the freeboard area of the solvent cleaning machine using the procedure specified in paragraphs (d)(1)(i)(A) through (d)(1)(i)(D) of this section.

(A) Determine the direction of the wind current by slowly rotating a velometer or similar device until the maximum speed is located.

(B) Orient a velometer in the direction of the wind current at each of the four corners of the machine.

(C) Record the reading for each corner.

(D) Average the values obtained at each corner and record the average wind speed.

(ii) Monitor on a weekly basis the room parameters established during

the initial compliance test that are used to achieve the reduced room draft.

(2) If an enclosure (full or partial) is used to achieve a reduced room draft, the owner or operator shall conduct an initial monitoring test and, thereafter, monthly monitoring tests of the wind-speed within the enclosure using the procedure specified in paragraphs (d)(2)(i) and (d)(2)(ii) of this section and a monthly visual inspection of the enclosure to determine if it is free of cracks, holes and other defects.

(i) Determine the direction of the wind current in the enclosure by slowly rotating a velometer inside the entrance to the enclosure until the maximum speed is located.

(ii) Record the maximum wind speed.

(e) Except as provided in paragraph (g) of this section, each owner or operator using a carbon adsorber to comply with this subpart shall measure and record the concentration of halogenated HAP solvent in the exhaust of the carbon adsorber weekly with a colorimetric detector tube. This test shall be conducted while the solvent cleaning machine is in the working mode and is venting to the carbon adsorber. The exhaust concentration shall be determined using the procedure specified in paragraphs (e)(1) through (e)(3) of this section.

(1) Use a colorimetric detector tube designed to measure a concentration of 100 parts per million by volume of solvent in air to an accuracy of  $\pm 25$  parts per million by volume.

(2) Use the colorimetric detector tube according to the manufacturer's instructions.

(3) Provide a sampling port for monitoring within the exhaust outlet of the carbon adsorber that is easily accessible and located at least 8 stack or duct diameters downstream from any flow disturbance such as a bend, expansion, contraction, or outlet; downstream from no other inlet; and 2 stack or duct diameters upstream from any flow disturbance such as a bend, expansion, contraction, inlet or outlet.

(f) Each owner or operator of a batch vapor or in-line solvent cleaning machine complying with the idling emission limit standards of § 63.463 (b)(1)(ii), (b)(2)(ii), (c)(1)(ii), or (c)(2)(ii) shall comply with the requirements specified

in paragraphs (f)(1) and (f)(2) of this section.

(1) If using controls listed in paragraphs (a) through (e) of this section, the owner or operator shall comply with the monitoring frequency requirements in paragraphs (a) through (e) of this section.

(2) If using controls not listed in paragraphs (a) through (e) of this section, the owner or operator shall establish the monitoring frequency for each control and submit it to the Administrator for approval in the initial test report.

(g) Each owner or operator using a control device listed in paragraphs (a) through (e) of this section can use alternative monitoring procedures approved by the Administrator.

#### § 63.467 Recordkeeping requirements.

(a) Each owner or operator of a batch vapor or in-line solvent cleaning machine complying with the provisions of § 63.463 shall maintain records in written or electronic form specified in paragraphs (a)(1) through (a)(5) of this section for the lifetime of the machine.

(1) Owner's manuals, or if not available, written maintenance and operating procedures, for the solvent cleaning machine and control equipment.

(2) The date of installation for the solvent cleaning machine and all of its control devices. If the exact date for installation is not known, a letter certifying that the cleaning machine and its control devices were installed prior to, or on, November 29, 1993, or after November 29, 1993, may be substituted.

(3) If a dwell is used to comply with these standards, records of the tests required in § 63.465(d) to determine an appropriate dwell time for each part or parts basket.

(4) Each owner or operator of a batch vapor or in-line solvent cleaning machine complying with the idling emission limit standards of § 63.463(b)(1)(ii), (b)(2)(ii), (c)(1)(ii), or (c)(2)(ii) shall maintain records of the initial performance test, including the idling emission rate and values of the monitoring parameters measured during the test.

(5) Records of the halogenated HAP solvent content for each solvent used

in a solvent cleaning machine subject to the provisions of this subpart.

(b) Each owner or operator of a batch vapor or in-line solvent cleaning machine complying with §63.463 shall maintain records specified in paragraphs (b)(1) through (b)(4) of this section either in electronic or written form for a period of 5 years.

(1) The results of control device monitoring required under §63.466.

(2) Information on the actions taken to comply with §63.463(e) and (f). This information shall include records of written or verbal orders for replacement parts, a description of the repairs made, and additional monitoring conducted to demonstrate that monitored parameters have returned to accepted levels.

(3) Estimates of annual solvent consumption for each solvent cleaning machine.

(4) If a carbon adsorber is used to comply with these standards, records of the date and results of the weekly measurement of the halogenated HAP solvent concentration in the carbon adsorber exhaust required in §63.466(e).

(c) Each owner or operator of a batch vapor or in-line solvent cleaning machine complying with the provisions of §63.464 shall maintain records specified in paragraphs (c)(1) through (c)(3) of this section either in electronic or written form for a period of 5 years.

(1) The dates and amounts of solvent that are added to the solvent cleaning machine.

(2) The solvent composition of wastes removed from cleaning machines as determined using the procedure described in §63.465(c)(2).

(3) Calculation sheets showing how monthly emissions and the rolling 3-month average emissions from the solvent cleaning machine were determined, and the results of all calculations.

(d) Each owner or operator of a solvent cleaning machine without a solvent/air interface complying with the provisions of §63.464 shall maintain records on the method used to determine the cleaning capacity of the cleaning machine.

#### §63.468 Reporting requirements.

(a) Each owner or operator of an existing solvent cleaning machine subject to the provisions of this subpart shall submit an initial notification report to the Administrator no later than August 29, 1995. This report shall include the information specified in paragraphs (a)(1) through (a)(6) of this section.

(1) The name and address of the owner or operator.

(2) The address (i.e., physical location) of the solvent cleaning machine(s).

(3) A brief description of each solvent cleaning machine including machine type (batch vapor, batch cold, vapor in-line or cold in-line), solvent/air interface area, and existing controls.

(4) The date of installation for each solvent cleaning machine or a letter certifying that the solvent cleaning machine was installed prior to, or after, November 29, 1993.

(5) The anticipated compliance approach for each solvent cleaning machine.

(6) An estimate of annual halogenated HAP solvent consumption for each solvent cleaning machine.

(b) Each owner or operator of a new solvent cleaning machine subject to the provisions of this subpart shall submit an initial notification report to the Administrator. New sources for which construction or reconstruction had commenced and initial startup had not occurred before December 2, 1994, shall submit this report as soon as practicable before startup but no later than January 31, 1995. New sources for which the construction or reconstruction commenced after December 2, 1994, shall submit this report as soon as practicable before the construction or reconstruction is planned to commence. This report shall include all of the information required in §63.5(d)(1) of subpart A (General Provisions), with the revisions and additions in paragraphs (b)(1) through (b)(3) of this section.

(1) The report shall include a brief description of each solvent cleaning machine including machine type (batch vapor, batch cold, vapor in-line, or cold-line), solvent/air interface area, and existing controls.

(2) The report shall include the anticipated compliance approach for each solvent cleaning machine.

(3) In lieu of § 63.5(d)(1)(ii)(H) of subpart A of this part, the owner or operator must report an estimate of annual halogenated HAP solvent consumption for each solvent cleaning machine.

(c) Each owner or operator of a batch cold solvent cleaning machine subject to the provisions of this subpart shall submit a compliance report to the Administrator. For existing sources, this report shall be submitted to the Administrator no later than 150 days after the compliance date specified in § 63.460(d). For new sources, this report shall be submitted to the Administrator no later than 150 days after startup or May 1, 1995, whichever is later. This report shall include the requirements specified in paragraphs (c)(1) through (c)(4) of this section.

(1) The name and address of the owner or operator.

(2) The address (i.e., physical location) of the solvent cleaning machine(s).

(3) A statement, signed by the owner or operator of the solvent cleaning machine, stating that the solvent cleaning machine for which the report is being submitted is in compliance with the provisions of this subpart.

(4) The compliance approach for each solvent cleaning machine.

(d) Each owner or operator of a batch vapor or in-line solvent cleaning machine complying with the provisions of § 63.463 shall submit to the Administrator an initial statement of compliance for each solvent cleaning machine. For existing sources, this report shall be submitted to the Administrator no later than 150 days after the compliance date specified in § 63.460(d). For new sources, this report shall be submitted to the Administrator no later than 150 days after startup or May 1, 1995, whichever is later. This statement shall include the requirements specified in paragraphs (d)(1) through (d)(6) of this section.

(1) The name and address of the owner or operator.

(2) The address (i.e., physical location) of the solvent cleaning machine(s).

(3) A list of the control equipment used to achieve compliance for each solvent cleaning machine.

(4) For each piece of control equipment required to be monitored, a list of the parameters that are monitored and the values of these parameters measured on or during the first month after the compliance date.

(5) Conditions to maintain the wind speed requirements of § 63.463(e)(2)(ii), if applicable.

(6) Each owner or operator of a solvent cleaning machine complying with the idling emission limit standards of § 63.463(b)(1)(ii), (b)(2)(ii), (c)(1)(ii), and (c)(2)(ii) shall submit a test report for tests of idling emissions meeting the specifications in Method 307 of appendix A to this subpart. This report shall comply with the requirements specified in paragraphs (d)(6)(i) through (d)(6)(iv) of this section.

(i) This test must be on the same specific model cleaner used at the source. The test can be done by the owner or operator of the affected machine or can be supplied by the vendor of that solvent cleaning machine or a third party.

(ii) This report must clearly state the monitoring parameters, monitoring frequency and the delineation of exceedances for each parameter.

(iii) If a solvent cleaning machine vendor or third party test report is used to demonstrate compliance, it shall include the following for the solvent cleaning machine tested: Name of person(s) or company that performed the test, model name, the date the solvent cleaning machine was tested, serial number, and a diagram of the solvent cleaning machine tested.

(iv) If a solvent cleaning machine vendor or third party test report is used, the owner or operator of the solvent cleaning machine shall comply with the requirements specified in either paragraphs (d)(6)(iv)(A) and (d)(6)(iv)(B) of this section.

(A) Submit a statement by the solvent cleaning machine vendor that the unit tested is the same as the unit the report is being submitted for.

(B) Demonstrate to the Administrator's satisfaction that the solvent emissions from the solvent cleaning machine for which the test report is being submitted are equal to or less

than the solvent emissions from the solvent cleaning machine in the vendor test report.

(7) If a carbon adsorber is used to comply with these standards, the date and results of the weekly measurement of the halogenated HAP solvent concentration in the carbon adsorber exhaust required in §63.466(e).

(e) Each owner or operator of a batch vapor or in-line solvent cleaning machine complying with the provisions of §63.464 shall submit to the Administrator an initial statement of compliance for each solvent cleaning machine. For existing sources, this report shall be submitted to the Administrator no later than 150 days after the compliance date specified in §63.460(d). For new sources, this report shall be submitted to the Administrator no later than 150 days after startup or May 1, 1995, whichever is later. The statement shall include the information specified in paragraphs (e)(1) through (e)(4) of this section.

(1) The name and address of the solvent cleaning machine owner or operator.

(2) The address of the solvent cleaning machine(s).

(3) The solvent/air interface area for each solvent cleaning machine or, for cleaning machines without a solvent/air interface, a description of the method used to determine the cleaning capacity and the results.

(4) The results of the first 3-month average emissions calculation.

(f) Each owner or operator of a batch vapor or in-line solvent cleaning machine complying with the provisions of §63.463 shall submit an annual report by February 1 of the year following the one for which the reporting is being made. This report shall include the requirements specified in paragraphs (f)(1) through (f)(3) of this section.

(1) A signed statement from the facility owner or his designee stating that, "All operators of solvent cleaning machines have received training on the proper operation of solvent cleaning machines and their control devices sufficient to pass the test required in §63.463(d)(10)."

(2) An estimate of solvent consumption for each solvent cleaning machine during the reporting period.

(3) The reports required under paragraphs (f) and (g) of this section can be combined into a single report for each facility.

(g) Each owner or operator of a batch vapor or in-line solvent cleaning machine complying with the provisions of §63.464 shall submit a solvent emission report every year. This solvent emission report shall contain the requirements specified in paragraphs (g)(1) through (g)(4) of this section.

(1) The size and type of each unit subject to this subpart (solvent/air interface area or cleaning capacity).

(2) The average monthly solvent consumption for the solvent cleaning machine in kilograms per month.

(3) The 3-month monthly rolling average solvent emission estimates calculated each month using the method as described in §63.465(c).

(4) The reports required under paragraphs (f) and (g) of this section can be combined into a single report for each facility.

(h) Each owner or operator of a batch vapor or in-line solvent cleaning machine shall submit an exceedance report to the Administrator semiannually except when, the Administrator determines on a case-by-case basis that more frequent reporting is necessary to accurately assess the compliance status of the source or, an exceedance occurs. Once an exceedance has occurred the owner or operator shall follow a quarterly reporting format until a request to reduce reporting frequency under paragraph (i) of this section is approved. Exceedance reports shall be delivered or postmarked by the 30th day following the end of each calendar half or quarter, as appropriate. The exceedance report shall include the applicable information in paragraphs (h) (1) through (3) of this section.

(1) Information on the actions taken to comply with §63.463 (e) and (f). This information shall include records of written or verbal orders for replacement parts, a description of the repairs made, and additional monitoring conducted to demonstrate that monitored parameters have returned to accepted levels.

(2) If an exceedance has occurred, the reason for the exceedance and a description of the actions taken.

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(3) If no exceedances of a parameter have occurred, or a piece of equipment has not been inoperative, out of control, repaired, or adjusted, such information shall be stated in the report.

(i) An owner or operator who is required to submit an exceedance report on a quarterly (or more frequent) basis may reduce the frequency of reporting to semiannual if the conditions in paragraphs (i)(1) through (i)(3) of this section are met.

(1) The source has demonstrated a full year of compliance without an exceedance.

(2) The owner or operator continues to comply with all relevant record-keeping and monitoring requirements specified subpart A (General Provisions) and in this subpart.

(3) The Administrator does not object to a reduced frequency of reporting for the affected source as provided in paragraph (e)(3)(iii) of subpart A (General Provisions).

(j) The Administrator has determined, pursuant to the criteria under section 502(a) of the Act, that an owner or operator of any batch cold solvent cleaning machine that is not itself a major source and that is not located at a major source, as defined under 40 CFR 70.2, is exempt from part 70 permitting requirements for that source.

An owner or operator of any other solvent cleaning machine subject to the provisions of this subpart is subject to part 70 permitting requirements, such sources, if not major or located at major sources, may be deferred by the State from part 70 permitting requirements for 5 years after the EPA first approves a part 70 program (i.e., until December 9, 1999). All sources receiving deferrals shall submit permit applications within 12 months of such date (by December 9, 2000).

(k) Each owner or operator of a solvent cleaning machine requesting an equivalency determination, as described in §63.469 shall submit an equivalency request report to the Administrator. For existing sources, this report must be submitted to the Administrator no later than June 3, 1996. For new sources, this report must be

submitted and approved by the Administrator prior to startup.

[59 FR 61805, Dec. 2, 1994; 60 FR 29485, June 5, 1995]

§63.469 Equivalent methods of control.

Upon written application, the Administrator may approve the use of equipment or procedures after they have been satisfactorily demonstrated to be equivalent, in terms of reducing emissions of methylene chloride, perchloroethylene, trichloroethylene, 1,1,1-trichloroethane, carbon tetrachloride or chloroform to the atmosphere, to those prescribed for compliance within a specified paragraph of this subpart. The application must contain a complete description of the equipment or procedure and the proposed equivalency testing procedure and the date, time, and location scheduled for the equivalency demonstration.

APPENDIX A TO SUBPART T—TEST OF SOLVENT CLEANING PROCEDURES

General Questions

- \_\_\_ 1. What is the maximum allowable speed for parts entry and removal?
  - A. 8.5 meters per minute (28 feet per minute).
  - B. 3.4 meters per minute (11 feet per minute).
  - C. 11 meters per minute (36 feet per minute).
  - D. No limit.
- \_\_\_ 2. How do you ensure that parts enter and exit the solvent cleaning machine at the speed required in the regulation?
  - A. Program on computerized hoist monitors speed.
  - B. Can judge the speed by looking at it.
  - C. Measure the time it takes the parts to travel a measured distance.
- \_\_\_ 3. Identify the sources of air disturbances.
  - A. Fans
  - B. Open doors
  - C. Open windows
  - D. Ventilation vents
  - E. All of the above
- \_\_\_ 4. What are the three operating modes?
  - A. Idling, working and downtime
  - B. Precleaning, cleaning, and drying
  - C. Startup, shutdown, off
  - D. None of the above
- \_\_\_ 5. When can parts or parts baskets be removed from the solvent cleaning machine?
  - A. When they are clean

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- B. At any time
  - C. When dripping stops
  - D. Either A or C is correct
- \_\_\_\_\_ 6. How must parts be oriented during cleaning?
- A. It does not matter as long as they fit in the parts basket.
  - B. So that the solvent pools in the cavities where the dirt is concentrated.
  - C. So that solvent drains from them freely.
- \_\_\_\_\_ 7. During startup, what must be turned off first, the primary condenser or the sump heater?
- A. Primary condenser
  - B. Sump heater
  - C. Turn both on at same time
  - D. Either A or B is correct
- \_\_\_\_\_ 8. During shutdown, what must be turned off first, the primary condenser or the sump heater?
- A. Primary condenser
  - B. Sump heater
  - C. Turn both off at same time
  - D. Either A or B is correct
- \_\_\_\_\_ 9. In what manner must solvent be added to and removed from the solvent cleaning machine?
- A. With leak proof couplings
  - B. With the end of the pipe in the solvent sump below the liquid solvent surface.
  - C. So long as the solvent does not spill, the method does not matter.
  - D. A and B
- \_\_\_\_\_ 10. What must be done with waste solvent and still and sump bottoms?
- A. Pour down the drain
  - B. Store in closed container
  - C. Store in a bucket
  - D. A or B
- \_\_\_\_\_ 11. What types of materials are prohibited from being cleaned in solvent cleaning machines using halogenated HAP solvents?
- A. Sponges
  - B. Fabrics
  - C. Paper
  - D. All of the above

*Control Device Specific Questions*

[ ] Freeboard Refrigeration Device

- \_\_\_\_\_ 1. What temperature must the FRD achieve?
- A. Below room temperature
  - B. 50°F

- C. Below the solvent boiling point
- D. 30 percent below the solvent boiling point

[ ] Working-Mode Cover

- \_\_\_\_\_ 2. When can a cover be open?
- A. While parts are in the cleaning machine
  - B. During parts entry and removal
  - C. During maintenance
  - D. During measurements for compliance purposes
  - E. A and C
  - F. B, C, and D
- \_\_\_\_\_ 3. Covers must be maintained in what condition?
- A. Free of holes
  - B. Free of cracks
  - C. So that they completely seal cleaner opening
  - D. All of the above

[ ] Dwell

- \_\_\_\_\_ 4. Where must the parts be held for the appropriate dwell time?
- A. In the vapor zone
  - B. In the freeboard area above the vapor zone
  - C. Above the cleaning machine
  - D. In the immersion sump

ANSWERS

*General Questions*

- 1. B
- 2. A or C
- 3. E
- 4. A
- 5. C
- 6. C
- 7. A
- 8. B
- 9. D
- 10. B
- 11. D

*Control Device Specific Questions*

- 1. D
- 2. F
- 3. D
- 4. B

[59 FR 61818, Dec. 2, 1994; 60 FR 29485, June 5, 1995]

APPENDIX B TO SUBPART T—GENERAL PROVISIONS APPLICABILITY TO SUBPART T

| Reference             | Applies to subpart T |           | Comments   |
|-----------------------|----------------------|-----------|--|
|                       | BCC                  | BVI       |  |
| 63.1(a) (1)–(3) ..... | Yes .....            | Yes ..... | Subpart T (this appendix) specifies applicability of each paragraph in subpart A to subpart T. |
| 63.1(a)(4) .....      | Yes .....            | Yes ..... |  |
| 63.1(a)(5) .....      | No .....             | No .....  |  |
| 63.1(a) (6)–(8) ..... | Yes .....            | Yes ..... |  |
| 63.1(a)(9) .....      | No .....             | No .....  |  |
| 63.1(a)(10) .....     | Yes .....            | Yes ..... |  |

APPENDIX B TO SUBPART T—GENERAL PROVISIONS APPLICABILITY TO SUBPART T—Continued

| Reference             | Applies to subpart T |           | Comments  |
|-----------------------|----------------------|-----------|---|
|                       | BCC                  | BVI       |   |
| 63.1(a)(11) .....     | No .....             | No .....  | Subpart T allows submittal of notifications and reports through the U.S. mail, fax, and courier. Subpart T requires that the postmark for notifications and reports submitted through the U.S. mail or other non-Governmental mail carriers be on or before deadline specified in an applicable requirement.  |
| 63.1(a) (12)–(14)     | Yes .....            | Yes ..... | Subpart T specifies applicability.  |
| 63.1(b)(1) .....      | No .....             | No .....  |   |
| 63.1(b)(2) .....      | No .....             | Yes ..... |   |
| 63.1(b)(3) .....      | No .....             | No .....  |   |
| 63.1(c)(1) .....      | Yes .....            | Yes ..... | Subpart T requires that a record of halogenated cleaning machine applicability determination be kept on site for 5 years, or until the cleaning machine changes its operations. The record shall be sufficiently detailed to allow the Administrator to make a finding about the source's applicability status with regard to subpart T.  |
| 63.1(c)(2) .....      | Yes .....            | Yes ..... |   |
| 63.1(c)(3) .....      | No .....             | No .....  | Subpart T, § 63.46(8)(h), indicates a Title V permit exemption for halogenated HAP batch cold solvent cleaning machines that are not major sources and not located at a major source. This section also specifies a deferral from the requirement of a Title V permit for owners or operators of solvent cleaning machines subject to subpart T provisions, other than halogenated HAP batch cold solvent cleaning machines, that are not major sources, and not located at a major source. |
| 63.1(c)(4) .....      | Yes .....            | Yes ..... |   |
| 63.1(c)(5) .....      | Yes .....            | Yes ..... |   |
| 63.1(d) .....         | No .....             | No .....  |   |
| 63.1(e) .....         | No .....             | Yes ..... |   |
| 63.2 .....            | Yes .....            | Yes ..... | Subpart T does not require continuous monitoring systems (CMS) or continuous opacity monitoring systems. Therefore, notifications and requirements for CMS and COMS specified in subpart A do not apply to subpart T.   |
| 63.1(d) .....         | No .....             | No .....  | Subpart T definitions (§ 63.461) for existing and new overlap with the definitions for existing source and new source in subpart A (§ 63.2). Both subpart A and T also define Administrator.  |
| 63.1(e) .....         | No .....             | Yes ..... |   |
| 63.2 .....            | Yes .....            | Yes ..... |   |
| 63.3(a)–(c) .....     | Yes .....            | Yes ..... |   |
| 63.4(a) (1)–(3) ..... | Yes .....            | Yes ..... |   |
| 63.4(a)(4) .....      | No .....             | No .....  |   |
| 63.4(a)(5) .....      | Yes .....            | Yes ..... |   |
| 63.4(b)–(c) .....     | Yes .....            | Yes ..... |   |
| 63.5(a)(1) .....      | Yes .....            | Yes ..... |   |
| 63.5(a)(2) .....      | Yes .....            | Yes ..... |   |
| 63.5(b)(1) .....      | Yes .....            | Yes ..... |   |
| 63.5(b)(2) .....      | No .....             | No .....  |   |
| 63.5(b)(3) .....      | No .....             | No .....  |   |
| 63.5(b)(4)–(6) .....  | Yes .....            | Yes ..... |   |
| 63.5(c) .....         | No .....             | No .....  |   |
| 63.5 (d)–(f) .....    | No .....             | No .....  |   |
| 63.6(a) .....         | Yes .....            | Yes ..... | Subpart T overrides the requirement for approval prior to constructing a new or reconstructing an existing major source.  |
| 63.5(c) .....         | No .....             | No .....  |   |
| 63.6(a) .....         | Yes .....            | Yes ..... | Subpart T overrides the requirement to submit an application for approval of construction or reconstruction of a halogenated solvent cleaning machine.  |
| 63.6(b) (1)–(5) ..... | Yes .....            | Yes ..... |   |
| 63.6(b)(6) .....      | No .....             | No .....  |   |
| 63.6(b)(7) .....      | No .....             | No .....  |   |
| 63.6(c)(1)–(2) .....  | Yes .....            | Yes ..... | Subpart T, § 63.460, specifies compliance dates.  |
| 63.6(c) (3)–(4) ..... | No .....             | No .....  | Subpart T has the same requirements for affected halogenated HAP solvent cleaning machine subcategories that are located at area sources as it does for those located at major sources.   |
| 63.6(c)(5) .....      | Yes .....            | Yes ..... |   |
| 63.6(d) .....         | No .....             | No .....  | Subpart T allows 3 years from the date of promulgation for both area and major existing sources to comply.  |
| 63.6(e)(1)–(2) .....  | Yes .....            | Yes ..... |   |
| 63.6(e)(3) .....      | No .....             | No .....  | Subpart T has the same requirements for affected halogenated HAP solvent cleaning machine subcategories that are located at area sources as it does for those located at major sources.   |
| 63.6(f)–(g) .....     | Yes .....            | Yes ..... |   |
| 63.6(h) .....         | No .....             | No .....  | Subpart T allows 3 years from the date of promulgation for both area and major existing sources to comply.  |
| 63.6(d) .....         | No .....             | No .....  | Subpart T overrides the requirement of a startup, shutdown, and malfunction plan. Subpart T specifies startup and shutdown procedures to be followed by an owner or operator for batch vapor and in-line cleaning machines.   |
| 63.6(e)(1)–(2) .....  | Yes .....            | Yes ..... |   |
| 63.6(e)(3) .....      | No .....             | No .....  | Subpart T overrides the requirement of a startup, shutdown, and malfunction plan. Subpart T specifies startup and shutdown procedures to be followed by an owner or operator for batch vapor and in-line cleaning machines.   |
| 63.6(f)–(g) .....     | Yes .....            | Yes ..... |   |
| 63.6(h) .....         | No .....             | No .....  | Subpart T does not require compliance with an opacity or visible emission standard.   |

APPENDIX B TO SUBPART T—GENERAL PROVISIONS APPLICABILITY TO SUBPART T—Continued

| Reference               | Applies to subpart T |           | Comments   |
|-------------------------|----------------------|-----------|--|
|                         | BCC                  | BVI       |  |
| 63.6(i) (1)–(14) .....  | Yes .....            | Yes ..... | Subpart T gives owners or operators the option to perform an idling emission performance test as a way of demonstrating compliance. Other options are also available that do not require a performance test.   |
| 63.6(i)(15) .....       | No .....             | No .....  |  |
| 63.6(i)(16) .....       | Yes .....            | Yes ..... |  |
| 63.6(j) .....           | Yes .....            | Yes ..... |  |
| 63.7(a) .....           | No .....             | Yes ..... |  |
| 63.7(b) .....           | No .....             | Yes ..... | This is only required for those owners or operators that choose the idling emission standard as their compliance option.   |
| 63.7(c)(1) .....        | No .....             | Yes ..... | This is only required for those owners or operators that choose the idling emission standard as their compliance option.   |
| 63.7(c) (2)–(3) .....   | No .....             | No .....  | Subpart T does not require a site-specific test plan for the idling emission performance test.   |
| 63.7(c)(4) .....        | No .....             | No .....  | Subpart T does not require a performance test that involves the retrieval of gas samples, and therefore this does not apply.   |
| 63.7(d) .....           | No .....             | No .....  | Requirements do not apply to the idling emission performance test option.  |
| 63.7(e) .....           | No .....             | Yes ..... | Subpart T specifies what is required to demonstrate idling emission standard compliance through the use of the Environmental Protection Agency test method 307 and control device monitoring. Reports and records of testing and monitoring are required for compliance verification. Three runs of the test are required for compliance, as specified in § 63.7(e) of subpart A.                            |
| 63.7(f) .....           | No .....             | Yes ..... |  |
| 63.7(g) .....           | No .....             | Yes ..... |  |
| 63.7(h) .....           | No .....             | No .....  |  |
| 63.8 (a)–(b) .....      | Yes .....            | Yes ..... | Subpart T does not require the use of continuous monitoring systems to demonstrate compliance.   |
| 63.8 (c)–(e) .....      | No .....             | No .....  |  |
| 63.8(f) .....           | Yes .....            | Yes ..... | Subpart T does not require continuous opacity monitoring systems and continuous monitoring systems data.   |
| 63.8(g) .....           | No .....             | No .....  |  |
| 63.9(a) (1)–(4) .....   | Yes .....            | Yes ..... |  |
| 63.9(b)(1) .....        | Yes .....            | Yes ..... | Subpart T includes all of those requirements stated in subpart A, except that subpart A also requires a statement as to whether the affected source is a major or an area source, and an identification of the relevant standard (including the source's compliance date). Subpart T also has some more specific information requirements specific to the affected source (see subpart T, §§ 63.468(a)–(b)). |
| 63.9(b)(2) .....        | Yes .....            | Yes ..... |  |
| 63.9(b)(3) .....        | Yes .....            | Yes ..... | The subpart A and subpart T initial notification reports differ (see above).   |
| 63.9(b)(4) .....        | No .....             | No .....  | Subpart T does not require an application for approval of construction or reconstruction.  |
| 63.9(b)(5) .....        | Yes .....            | Yes ..... | Under subpart T, this requirement only applies to owners or operators choosing to comply with the idling emissions standard.   |
| 63.9(c) .....           | Yes .....            | Yes ..... |  |
| 63.9(d) .....           | Yes .....            | Yes ..... |  |
| 63.9(e) .....           | Yes .....            | Yes ..... |  |
| 63.9(f) .....           | No .....             | No .....  |  |
| 63.9(g)(1) .....        | No .....             | No .....  | Subpart T does not require the use of continuous monitoring systems or continuous opacity monitoring systems.  |
| 63.9(h) .....           | No .....             | No .....  | Section 63.468 of subpart T requires an initial statement of compliance for existing sources to be submitted to the Administrator no later than 150 days after the compliance date specified in § 63.460(d) of subpart T. For new sources, this report is to be submitted to the Administrator no later than 150 days from the date specified in § 63.460(c).  |
| 63.9(i) .....           | Yes .....            | Yes ..... | Recordkeeping requirements are specified in subpart T.<br>Subpart T does not require continuous monitoring systems.<br><br>Reporting requirements are specified in subpart T.<br>Subpart T does not require continuous emissions monitoring systems.<br>Subpart T does not require continuous monitoring systems.<br>Subpart T does not require continuous opacity monitoring systems.                       |
| 63.9(j) .....           | Yes .....            | Yes ..... |  |
| 63.10(a) .....          | Yes .....            | Yes ..... |  |
| 63.10(b) .....          | No .....             | No .....  |  |
| 63.10(c) (1)–(15) ..... | No .....             | No .....  |  |
| 63.10(d)(1) .....       | Yes .....            | Yes ..... |  |
| 63.10(d)(2) .....       | No .....             | No .....  |  |
| 63.10(e) (1)–(2) .....  | No .....             | No .....  |  |
| 63.10(e)(3) .....       | No .....             | No .....  |  |
| 63.10(e)(4) .....       | No .....             | No .....  |  |
| 63.10(f) .....          | Yes .....            | Yes ..... |  |

APPENDIX B TO SUBPART T—GENERAL PROVISIONS APPLICABILITY TO SUBPART T—Continued

| Reference           | Applies to subpart T |           | Comments  |
|---------------------|----------------------|-----------|---|
|                     | BCC                  | BVI       |   |
| 63.11(a) .....      | Yes .....            | Yes ..... | Flares are not a control option under subpart T.  |
| 63.11(b) .....      | No .....             | No .....  |   |
| 63.12 (a)–(c) ..... | Yes .....            | Yes ..... | Subpart T requirements do not require the use of the test methods incorporated by reference in subpart A. |
| 63.13 (a)–(c) ..... | Yes .....            | Yes ..... |   |
| 63.14 .....         | No .....             | No .....  |   |
| 63.15(a)–(b) .....  | Yes .....            | Yes ..... |   |

BCC=Batch Cold Cleaning Machines.  
 BVI=Batch Vapor and In-line Cleaning Machines.

[59 FR 61818, Dec. 2, 1994; 60 FR 29485, June 5, 1995]

**Subparts U–V [Reserved]**

**Subpart W—National Emission Standards for Hazardous Air Pollutants for Epoxy Resins Production and Non-Nylon Polyamides Production**

SOURCE: 60 FR 12676, Mar. 8, 1995, unless otherwise noted.

**§ 63.520 Applicability and designation of sources.**

The provisions of this subpart apply to all existing, new, and reconstructed manufacturers of basic liquid epoxy resins (BLR) and manufacturers of wet strength resins (WSR) that are located at a plant site that is a major source, as defined in section 112(a) of the Clean Air Act. Research and development facilities, as defined in § 63.522, are exempt from the provisions of this subpart. The affected source is also defined in § 63.522. If a change occurs to an existing source that does not constitute reconstruction then the additions have to meet the existing source requirements of the MACT standards. Any reconstruction of an existing source, or construction of a new source, must meet the new source standard. Affected sources are also subject to certain requirements of subpart A of this part, as specified in Table 1 of this subpart.

**§ 63.521 Compliance schedule.**

(a) Owners or operators of existing affected BLR and WSR sources shall comply with the applicable provisions

of this subpart within 3 years of the promulgation date.

(b) New and reconstructed sources subject to this subpart shall be in compliance with the applicable provisions of this subpart upon startup.

**§ 63.522 Definitions.**

Terms used in this subpart are defined in the Act, in subpart A of this part, or in this section as follows:

*Administrator* means the Administrator of the U.S. Environmental Protection Agency, or any official designee of the Administrator.

*Affected source* means all HAP emission points within a facility that are related to the production of BLR or WSR, including process vents, storage tanks, wastewater systems, and equipment leaks.

*Basic liquid epoxy resins (BLR)* means resins made by reacting epichlorohydrin and bisphenol A to form diglycidyl ether of bisphenol-A (DGEBA).

*Batch emission episode* means a discrete venting episode that may be associated with a single unit operation. For example, a displacement of vapor resulting from the charging of a vessel with HAP will result in a discrete emission episode that will last through the duration of the charge and will have an average flow rate equal to the rate of the charge. If the vessel is then heated, there will also be another discrete emission episode resulting from the expulsion of expanded vessel vapor space. Both emission episodes may occur in the same vessel or unit operation. There are possibly other emission episodes that may occur from the vessel or other process equipment, depending on process operations.

*Batch process* refers to a discontinuous process involving the bulk movement of material through sequential manufacturing steps. Mass, temperature, concentration, and other properties of a system vary with time. Addition of raw material and withdrawal of product do not typically occur simultaneously in a batch process.

*Closed-vent system* means a system that is not open to the atmosphere and is composed of piping, ductwork, connections, and, if necessary, flow-inducing devices that transport gas or vapor from an emission point to a control device or back into the process.

*Continuous process* means a process where the inputs and outputs flow continuously throughout the duration of the process. Continuous processes are typically steady-state.

*Drain system* means the system used to convey wastewater streams from a process unit, product storage tank, or feed storage tank to a waste management unit. The term includes all process drains and junction boxes, together with their associated sewer lines and other junction boxes, manholes, sumps, and lift stations, down to the receiving waste management unit. A segregated stormwater sewer system, which is a drain and collection system designed and operated for the sole purpose of collecting rainfall-runoff at a facility, and which is segregated from all other drain systems, is excluded from this definition.

*Equipment leaks* means emissions of hazardous air pollutants from a pump, compressor, agitator, pressure relief device, sampling connection system, open-ended valve or line, or instrumentation system in organic hazardous air pollutant service.

*Process vent* means a point of emission from a unit operation. Typical process vents include condenser vents, vacuum pumps, steam ejectors, and atmospheric vents from reactors and other process vessels.

*Production-based emission rate* means a ratio of the amount of HAP emitted to the amount of BLR or WSR produced.

*Research and development facility* means laboratory operations whose primary purpose is to conduct research and development into new processes and products, where the operations are

under the close supervision of technically trained personnel, and is not engaged in the manufacture of products for commercial sale, except in a de minimis manner.

*Storage tank* means a tank or other vessel that is used to store liquids that contain one or more HAP compounds.

*Unit operation* means those processing steps that occur within distinct equipment that are used, among other things, to prepare reactants, facilitate reactions, separate and purify products, and recycle materials. There may be several emission episodes within a single unit operation.

*Waste management unit* means any component, piece of equipment, structure, or transport mechanism used in storing, treating, or disposing of wastewater streams, or conveying wastewater between storage, treatment, or disposal operations.

*Wastewater* means aqueous liquid waste streams exiting equipment at an affected source.

*Wastewater system* means a system made up of a drain system and one or more waste management units.

*Wet strength resins (WSR)* means polyamide/ epichlorohydrin condensates which are used to increase the tensile strength of paper products.

#### **§ 63.523 Standards for basic liquid resins manufacturers.**

(a) Owners or operators of existing affected BLR sources shall operate sources such that the rate of emissions of hazardous air pollutants from all process vents, storage tanks, and wastewater systems combined shall not exceed 130 pounds per 1 million pounds of BLR produced.

(b) Owners or operators of new or reconstructed affected BLR sources shall reduce uncontrolled emissions from the sum of uncontrolled process vents, storage tanks, and wastewater systems by 98 percent, or limit the total emissions from these emission points to 5,000 pounds per year.

(1) For process vents, uncontrolled emissions are defined as gaseous emission streams past the last recovery device.

(2) For storage tanks, uncontrolled emissions are defined as emissions calculated according to the methodology specified in § 63.150(g)(3).

(3) For wastewater systems, uncontrolled emissions are the total amount of HAP discharged to the drain system.

(c) Owners or operators of existing, new, or reconstructed affected BLR sources shall comply with the requirements of subpart H of this part to control emissions from equipment leaks.

**§ 63.524 Standards for wet strength resins manufacturers.**

(a) Owners or operators of existing affected WSR sources shall either:

(1) Limit the total emissions of hazardous air pollutants from all process vents, storage tanks, and wastewater systems to 10 pounds per 1 million pounds of wet strength resins produced; or

(2) Comply with the requirements of subpart H of this part to control emissions from equipment leaks.

(b) Owners or operators of new or reconstructed affected WSR sources shall either:

(1) Limit the total emissions of hazardous air pollutants from all process vents, storage tanks, and wastewater systems to 7 pounds per 1 million pounds of wet strength resins produced; or

(2) Comply with the requirements of subpart H of this part to control emissions from equipment leaks.

**§ 63.525 Compliance and performance testing.**

(a) The owner or operator of any existing affected BLR source shall, in order to demonstrate initial compliance with the applicable emission limit, determine the emission rate from all process vent, storage tank, and wastewater system emission points using the methods described below. Compliance tests shall be performed under normal operating conditions.

(1) The owner or operator shall use the EPA Test Methods from 40 CFR part 60, appendix A, listed in paragraphs (a)(1) (i) through (iii) of this section, to determine emissions from process vents. Testing of process vents on equipment operating as part of a continuous process will consist of con-

ducting three 1-hour runs. Gas stream volumetric flow rates shall be measured every 15 minutes during each 1-hour run. Organic HAP or TOC concentration shall be determined from samples collected in an integrated sample over the duration of each 1-hour test run, or from grab samples collected simultaneously with the flow rate measurements (every 15 minutes). If an integrated sample is collected for laboratory analysis, the sampling rate shall be adjusted proportionally to reflect variations in flow rate. If the flow of gaseous emissions is intermittent, determination of emissions from process vents shall be performed according to the methods specified in paragraph (e) of this section. For process vents with continuous gas streams, the emission rate used to determine compliance shall be the average emission rate of the 3 test runs. For process vents with intermittent emission streams, the calculated emission rate or the emission rate from a single test run may be used to determine compliance.

(i) Method 1 or 1A of 40 CFR part 60, appendix A, as appropriate, shall be used for selection of the sampling sites if the flow measuring device is a pitot tube. A traverse shall be conducted before and after each 1-hour sampling period. No traverse is necessary when using Method 2A or 2D to determine flow rate.

(ii) Method 2, 2A, 2C or 2D of 40 CFR part 60, appendix A, as appropriate, shall be used for the determination of gas stream volumetric flow rate. If Method 2 or 2C is used, the velocity measurements shall be made at a single point, in conjunction with the traverse, to establish an average velocity across the stack.

(iii) Method 25A and/or Methods 18 and 25A of 40 CFR part 60, appendix A, as appropriate, shall be used to determine the concentration of HAP in the streams.

(iv) Initial determination of de minimis status for process vents may be made by engineering assessment, as specified in § 63.526(a)(1)(iv).

(2) Emissions from wastewater treatment systems shall be determined in accordance with the methods described in 40 CFR part 63, appendix C.

(3) Emissions from storage tanks shall be calculated in accordance with the methods specified in § 63.150(g)(3).

(b) The owner or operator of any existing affected BLR source shall determine a production-based emission rate for each emission point by dividing the emission rate of each emission point by the BLR production rate of the source. The production rate shall be based on normal operations.

(1) The production-based emission rate for process vents shall be calculated by dividing the average emission rate the average production rate.

(2) The production-based emission rate for storage tanks shall be calculated by dividing annual emissions for each storage tank emission point by the production rate for a one-year period. The production rate shall be calculated using the same data used to calculate the production-based emission rate in paragraph (b)(1) of this section, converted to an annual rate.

(3) The production-based emission rate for wastewater systems shall be calculated by dividing annual emissions for each wastewater system emission point by the production rate for one-year period. The production rate shall be calculated using the same data used to calculate the production-based emission rate in paragraph (b)(1) of this section, converted to an annual rate.

(c) The owner or operator of an existing affected BLR source shall calculate the total emissions per product produced by summing the production-based emissions for all process vent, storage tank, and wastewater system emission points according to the following equation:

$$E = \sum PV + \sum ST + \sum WW$$

where:

E=emissions, pounds (lb) HAP per million (MM) lb product;

PV=process vent emissions, lb HAP/MM lb product;

ST=storage tank emissions, lb HAP/MM lb product; and

WW=wastewater system emissions, lb HAP/MM lb product.

The source is in compliance with the standard for process vents, storage tanks, and wastewater systems if the sum of the equation is less than the applicable emission limit from § 63.523(a).

(d) The owner or operator of any new or reconstructed affected BLR source shall demonstrate compliance using the methods described in this section.

(1) Any owner or operator who elects to comply with § 63.523(b) by achieving 98 percent control of emissions from process vents, storage tanks, and wastewater systems shall demonstrate compliance according to the requirements of paragraphs (d)(1) (i) through (iv) of this section.

(i) The owner or operator shall perform testing as specified in paragraph (a)(1) of this section to determine controlled and uncontrolled emissions from process vents. Sampling points for determining uncontrolled emissions shall be located based on the definition of uncontrolled process vents in § 63.523(b)(1).

(ii) The owner or operator shall calculate controlled and uncontrolled emissions from storage tanks in accordance with the methods specified in § 63.150(g)(3).

(iii) The owner or operator shall determine controlled and uncontrolled emissions from wastewater systems using the methodology of 40 CFR part 63, appendix C. Uncontrolled emission calculations shall be consistent with the definition of uncontrolled wastewater system emissions in § 63.523(b)(3).

(iv) The owner or operator shall calculate the percent reduction in emissions from process vents, storage tanks, and wastewater systems combined. The affected source is in compliance if the emission reduction is greater than or equal to 98 percent.

(2) Any owner or operator who elects to comply with § 63.523(b) by limiting HAP emissions from process vents, storage tanks, and wastewater systems to 5,000 pounds per year or less shall demonstrate compliance according to the requirements of paragraphs (d)(2) (i) and (ii) of this section.

(i) Emissions from process vents, storage tanks, and wastewater systems shall be determined according to paragraphs (a) (1) through (3) of this section. Emissions shall be converted to annual emissions. Annual emission calculations shall reflect production levels representative of normal operating conditions.

(ii) The owner or operator shall calculate total emissions from all process vent, storage tank, and wastewater system emission points. The affected source is in compliance with the standard if total emissions are less than or equal to 5,000 lb/yr.

(e) The owner or operator of any existing, new, or reconstructed WSR source that chooses to comply with the emission limit for process vents, storage tanks, and wastewater systems shall demonstrate initial compliance by determining emissions for all process vent, storage tank, and wastewater systems emission points using the methods described in this section.

(1) Emissions of HAP reactor process vents shall be calculated for each batch emission episode according to the methodologies described in paragraph (e)(1) of this section.

(i) Emissions from vapor displacement due to transfer of material into or out of the reactor shall be calculated according to the following equation:

$$E = \frac{(y_i)(V)(P_T)(MW)}{(R)(T)}$$

where:

E=mass emission rate;  
 $y_i$ =saturated mole fraction of HAP in the vapor phase;  
 V=volume of gas displaced from the vessel;  
 R=ideal gas law constant;  
 T=temperature of the vessel vapor space; absolute;  
 $P_T$ =pressure of the vessel vapor space; and  
 MW=molecular weight of the HAP.

(ii) Emissions from reactor purging shall be calculated using the methodology described in paragraph (e)(1)(i) of this section, except that for purge flow rates greater than 100 standard cubic feet per minute (scfm), the mole fraction of HAP will be assumed to be 25 percent of the saturated value.

(iii) Emissions caused by heating of the reactor vessel shall be calculated according to the following methodology:

$$E = \frac{\frac{\sum(P_i)_{T1}}{Pa_1} + \frac{\sum(P_i)_{T2}}{Pa_2}}{2} \times \Delta\eta \times MW_{HAP}$$

where:

E=mass of HAP vapor displaced from the vessel being heated up;  
 $(P_i)_{Tn}$ =partial pressure of each HAP in the vessel headspace at initial (n=1) and final (n=2) temperature;  
 $Pa_1$ =initial gas pressure in the vessel;  
 $Pa_2$ =final gas pressure; and  
 $MW_{HAP}$ =the average molecular weight of HAP present in the vessel.

The moles of gas displaced is represented by:

$$\Delta\eta = \frac{V}{R} \left[ \left( \frac{Pa_1}{T_1} \right) - \left( \frac{Pa_2}{T_2} \right) \right]$$

where:

$\eta$ =number of lb-moles of gas displaced;  
 V=volume of free space in the vessel;

R=ideal gas law constant;  
 $Pa_1$ =initial gas pressure in the vessel;  
 $Pa_2$ =final gas pressure;  
 $T_1$ =initial temperature of vessel; and  
 $T_2$ =final temperature of vessel.

The initial pressure of the non-condensable gas in the vessel shall be calculated according to the following equation:

$$Pa_1 = P_{atm} - \sum(P_{ic})_{T1}$$

where:

$Pa_1$ =initial partial pressure of gas in the vessel headspace;  
 $P_{atm}$ =atmospheric pressure; and  
 $(P_{ic})_{T1}$ =initial partial pressure of each condensable volatile organic compound (including HAP) in the vessel headspace, at the initial temperature ( $T_1$ ).

The average molecular weight of HAP in the displaced gas shall be calculated as follows:

$$MW_{\text{HAP}} = \frac{\sum_{i=1}^n (\text{mass of HAP})_i}{\sum_{i=1}^n \frac{(\text{mass of HAP})_i}{(\text{HAP molecular weight})_i}}$$

where n is the number of different HAP compounds in the emission stream.

(2) Emissions of HAP from process vents may be measured directly. The EPA Test Methods listed in paragraph (e)(2) (i) through (iii) of this section, from 40 CFR part 60, appendix A, shall be used to demonstrate compliance with the requirements of § 63.524 by direct measurement. Testing shall be performed for every batch emission episode of the unit operation. Gas stream volumetric flow rates shall be measured at 15-minute intervals, or at least once during each batch emission episode. Organic HAP or TOC concentration shall be determined from samples collected in an integrated sample over the duration of each episode, or from grab samples collected simultaneously with the flow rate measurements (every 15 minutes). If an integrated sample is collected for laboratory analysis, the sampling rate shall be adjusted proportionally to reflect variations in flow rate. Test conditions shall represent the normal operating conditions under which the data used to calculate the production rate are taken.

(i) Method 1 or 1A of 40 CFR part 60, appendix A, as appropriate, shall be used for selection of the sampling sites if the flow measuring device is a pitot tube. A traverse shall be conducted before and after each sampling period. No traverse is necessary when using Method 2A or 2D.

(ii) Method 2, 2A, 2C or 2D of 40 CFR part 60, appendix A, as appropriate, shall be used for the determination of gas stream volumetric flow rate. If Method 2 or 2C is used, the velocity measurements shall be made at a single point than can be used, in conjunction with the traverse, to establish an average velocity across the stack.

(iii) Method 25A and/or Methods 18 and 25A of 40 CFR part 60, appendix A,

as appropriate, shall be used to determine the concentration of HAP in the streams.

(iv) The owner or operator may choose to perform tests only during those periods of the episode in which the emission rate for the entire episode can be determined, or when the emissions are greater than the average emission rate of the episode. The owner or operator who chooses either of these options must develop an emission profile for the entire batch emission episode, based on either process knowledge or test data collected, to demonstrate that test periods are representative. Examples of information that could constitute process knowledge include calculations based on material balances, and process stoichiometry. Previous test results may be used provided the results are still relevant to the current process vent stream conditions.

(v) For batch emission episodes of duration greater than 8 hours, the owner or operator is required to perform a maximum of 8 hours of testing. The test period must include the period of time in which the emission rate is predicted by the emission profile to be greater than average emission rate for the batch emission episode.

(f) The owner or operator of any affected WSR source that chooses to comply with the emissions limit for process vents, storage tanks, and wastewater systems shall calculate emissions from storage tanks in accordance with the methods specified in § 63.150(g)(3).

(g) The owner or operator of any affected WSR source that chooses to comply with the emission limit for process vents, storage tanks, and wastewater systems shall calculate emissions from wastewater treatment systems (if applicable) in accordance with the methods described in 40 CFR part 63, appendix C.

(h) The owner or operator of any affected WSR source that chooses to comply with the emission limit for process vents, storage tanks, and wastewater systems shall calculate the average amount of WSR product manufactured per batch, using data from performance tests or from emission

calculations, as applicable, to determine the average WSR production per batch production data for an annual period representing normal operating conditions.

(1) The owner or operator shall calculate an average emission rate per batch as the average of the results from the performance tests or calculations. The production-based emission rate shall be calculated by dividing the emissions per batch by the average production per batch.

(2) Compliance shall be determined according to the methodology described in paragraph (c) of this section. The source is in compliance with the standard for process vents, storage tanks, and wastewater systems if the sum of the equation in paragraph (c) of this section is less than the applicable emission limit from § 63.524.

(i) The owner or operator of any affected BLR source or any affected WSR source that chooses to comply with the requirements of subpart H of this part must demonstrate the ability of its specific program to meet the compliance requirements therein to achieve initial compliance.

**§ 63.526 Monitoring requirements.**

(a) The owner or operator of any existing, new, or reconstructed affected BLR source shall provide evidence of continued compliance with the standard. During the initial compliance demonstration, maximum or minimum operating parameters, as appropriate, shall be established for processes and control devices that will indicate the source is in compliance. If the operating parameter to be established is a maximum, the value of the parameter shall be the average of the maximum values from each of the three test runs. If the operating parameter to be established is a minimum, the value of the parameter shall be the average of the minimum values from each of the three test runs. Parameter values for process vents with intermittent emission streams shall be determined as specified in paragraph (b)(1) of this section. The owner or operator shall operate processes and control devices within these parameters to ensure continued compliance with the standard. A de minimis level is specified in paragraph

(a)(1) of this section. Monitoring parameters are specified for various process vent control scenarios in paragraphs (a) (2) through (6) of this section.

(1) For affected BLR sources, uncontrolled emission points emitting less than one pound per year of HAP are not subject to the monitoring requirements of paragraphs (a) (2) through (6) of this section. The owner or operator shall use the methods specified in § 63.525(a), as applicable, or as specified in paragraph (a)(1)(i) of this section, to demonstrate which emission points satisfy the de minimis criteria, to the satisfaction of the Administrator.

(i) For the purpose of determining de minimis status for emission points, engineering assessment may be used to determine process vent stream flow rate and/or concentration for the representative operating conditions expected to yield the highest flow rate and concentration. Engineering assessment includes, but is not limited to, the following:

(A) Previous test results provided the tests are representative of current operating practices at the process unit.

(B) Bench-scale or pilot-scale test data representative of the process under representative operating conditions.

(C) Maximum flow rate, HAP emission rate, concentration, or other relevant parameter specified or implied within a permit limit applicable to the process vent.

(D) Design analysis based on accepted chemical engineering principles, measurable process parameters, or physical or chemical laws or properties. Examples of analytical methods include, but are not limited to:

(1) Use of material balances based on process stoichiometry to estimate maximum organic HAP concentrations,

(2) Estimation of maximum flow rate based on physical equipment design such as pump or blower capacities,

(3) Estimation of HAP concentrations based on saturation conditions.

(ii) All data, assumptions, and procedures used in the engineering assessment shall be documented in accordance with § 63.527(c).

(2) For affected sources using water scrubbers, the owner or operator shall

establish a minimum scrubber water flow rate as a site-specific operating parameter which must be measured and recorded every 15 minutes. The affected source will be considered to be out of compliance if the scrubber water flow rate, averaged over any continuous 24-hour period, is below the minimum value established during the initial compliance demonstration.

(3) For affected sources using condensers, the owner or operator shall establish the maximum condenser outlet gas temperature as a site-specific operating parameter which must be measured and recorded every 15 minutes. The affected source will be considered to be out of compliance if the condenser outlet gas temperature, averaged over any continuous 24-hour period, is greater than the maximum value established during the initial compliance demonstration.

(4) For affected sources using carbon adsorbers or having uncontrolled process vents, the owner or operator shall establish a maximum outlet HAP concentration as the site-specific operating parameter which must be measured and recorded every 15 minutes. The affected source will be considered to be out of compliance if the outlet HAP concentration, averaged over any continuous 24-hour period, is greater than the maximum value established during the initial compliance demonstration.

(5) For affected sources using flares, the presence of the pilot flame shall be monitored every 15 minutes. The affected source will be considered to be out of compliance upon loss of pilot flame.

(6) Wastewater system parameters to be monitored are the parameters specified under 40 CFR part 414, subpart E. The affected source will be considered to be out of compliance with this subpart W if it is found to be out of compliance with 40 CFR part 414, subpart E.

(b) The owner or operator of any existing, new, or reconstructed affected WSR source that chooses to comply with the emission limit for process vents, storage tanks, and wastewater systems shall provide evidence of continued compliance with the standard. As part of the initial compliance demonstrations for batch process vents,

test data or compliance calculations shall be used to establish a maximum or minimum level of a relevant operating parameter for each unit operation. The parameter value for each unit operation shall represent the worst case value of the operating parameter from all episodes in the unit operation. The owner or operator shall operate processes and control devices within these parameters to ensure continued compliance with the standard.

(1) For batch process vents, the level shall be established in accordance with paragraphs (b)(1) (i) through (iv) of this section if compliance testing is performed.

(i) If testing is used to demonstrate initial compliance, the appropriate parameter shall be monitored during all batch emission episodes in the unit operation.

(ii) An average monitored parameter value shall be determined for each of the batch emission episodes in the unit operation.

(iii) If the level to be established for the unit operation is a maximum operating parameter, the level shall be defined as the minimum of the average parameter values determined in paragraph (b)(1)(ii) of this section.

(iv) If the level to be established for the unit operation is a minimum operating parameter, the level shall be defined as the maximum of the average parameter values determined in paragraph (b)(1)(ii) of this section.

(2) Affected sources with condensers on process vents shall establish the maximum condenser outlet gas temperature as a site-specific operating parameter, which must be measured every 15 minutes, or at least once for batch emission episodes less than 15 minutes in duration. The affected source will be considered to be out of compliance if the maximum condenser outlet gas temperature, averaged over the duration of the batch emission episode or unit operation, is greater than the value established during the initial compliance demonstration.

(3) For affected sources using water scrubbers, the owner or operator shall establish a minimum scrubber water flow rate as a site-specific operating parameter which must be measured and recorded every 15 minutes, or at

least once for batch emission episodes less than 15 minutes in duration. The affected source will be considered to be out of compliance if the scrubber water flow rate, averaged over the duration of the batch emission episode or unit operation, is below the minimum flow rate established during the initial compliance demonstration.

(4) For affected sources using carbon adsorbers or having uncontrolled process vents, the owner or operator shall establish a maximum outlet HAP concentration as the site-specific operating parameter which must be measured and recorded every 15 minutes, or at least once for batch emission episodes of duration shorter than 15 minutes. The affected source will be considered to be out of compliance if the outlet HAP concentration, averaged over the duration of the batch emission episode or unit operation, is greater than the value established during the initial compliance demonstration.

(5) For affected sources using flares, the presence of the pilot flame shall be monitored every 15 minutes, or at least once for batch emission episodes less than 15 minutes in duration. The affected source will be considered to be out of compliance upon loss of pilot flame.

(6) Wastewater system parameters to be monitored are the parameters specified by 40 CFR part 414, subpart E. The affected source will be considered to be out of compliance with this subpart W if it is found to be out of compliance with 40 CFR part 414, subpart E.

(c) Periods of time when monitoring measurements exceed the parameter values do not constitute a violation if they occur during a startup, shutdown, or malfunction, and the facility follows its startup, shutdown, and malfunction plan.

(d) The owner or operator of any affected WSR source that chooses to comply with the requirements of subpart H of this part shall meet the monitoring requirements of subpart H of this part.

**§ 63.527 Recordkeeping requirements.**

(a) The owner or operator of any affected BLR source shall keep records of daily average values of equipment operating parameters specified to be

monitored under § 63.526(a) or specified by the Administrator. Records shall be kept in accordance with the requirements of applicable paragraphs of § 63.10 of subpart A of this part, as specified in the General Provisions applicability table of this subpart. The owner or operator shall keep records up-to-date and readily accessible.

(1) A daily (24-hour) average shall be calculated as the average of all values for a monitored parameter recorded during the operating day. The average shall cover a 24-hour period if operation is continuous, or the number of hours of operation per operating day if operation is not continuous.

(2) The operating day shall be the period defined in the operating permit or the Notification of Compliance Status in § 63.9(h) of subpart A of this part. It may be from midnight to midnight or another continuous 24-hour period.

(3) In the event of an excursion, the owner or operator must keep records of each 15-minute reading during the period in which the excursion occurred.

(b) The owner or operator of any affected WSR source that elects to comply with the emission limit for process vents, storage tanks, and wastewater systems shall keep records of values of equipment operating parameters specified to be monitored under § 63.526(b) or specified by the Administrator. The records that shall be kept are the average values of operating parameters, determined for the duration of each unit operation. Records shall be kept in accordance with the requirements of applicable paragraphs of § 63.10 of subpart A of this part, as specified in the General Provisions applicability table in this subpart. The owner or operator shall keep records up-to-date and readily accessible. In the event of an excursion, the owner or operator must keep records of each 15-minute reading for the entire unit operation in which the excursion occurred.

(c) The owner or operator of any affected BLR source, as well the owner or operator of any affected WSR source that chooses to comply with the emission limit for process vents, storage tanks, and wastewater systems, who demonstrates that certain process vents are below the de minimis cutoff for continuous monitoring specified in

§ 63.526(a)(1)(i), shall maintain up-to-date, readily accessible records of the following information to document that a HAP emission rate of less than one pound per year is maintained:

(1) The information used to determine de minimis status for each de minimis process vent, as specified in § 63.526(a)(1)(i);

(2) Any process changes as defined in § 63.115(e) of subpart G of this part that increase the HAP emission rate;

(3) Any recalculation or measurement of the HAP emission rate pursuant to § 63.115(e) of subpart G of this part; and

(4) Whether or not the HAP emission rate increases to one pound per year or greater as a result of the process change.

(d) The owner or operator of any affected BLR source, as well as the owner or operator of any affected WSR source who elects to implement the leak detection and repair program specified in subpart H of this part, shall implement the recordkeeping requirements outlined therein. All records shall be retained for a period of 5 years, in accordance with the requirements of 40 CFR 63.10(b)(1).

(e) Any excursion from the required monitoring parameter, unless otherwise excused, shall be considered a violation of the emission standard.

**§ 63.528 Reporting requirements.**

(a) The owner or operator of any affected BLR source, as well as the owner or operator of any affected WSR source that elects to comply with the emission limit for process vents, storage tanks, and wastewater systems, shall comply with the reporting requirements of applicable paragraphs of § 63.10 of subpart A of this part, as specified in the General Provisions applicability table in this subpart. The owner or operator shall also submit to the Administrator, as part of the quarterly excess emissions and continuous monitoring system performance report and summary report required by § 63.10(e)(3) of subpart A of this part, the following recorded information.

(1) Reports of monitoring data, including 15-minute monitoring values as well as daily average values or per-unit operation average values, as applica-

ble, of monitored parameters for all operating days or unit operations when the average values were outside the ranges established in the Notification of Compliance Status or operating permit.

(2) Reports of the duration of periods when monitoring data is not collected for each excursion caused by insufficient monitoring data. An excursion means any of the three cases listed in paragraph (a)(2)(i) or (a)(2)(ii) of this section. For a control device where multiple parameters are monitored, if one or more of the parameters meets the excursion criteria in paragraph (a)(2)(i) or (a)(2)(ii) of this section, this is considered a single excursion for the control device.

(i) When the period of control device operation is 4 hours or greater in an operating day and monitoring data are insufficient to constitute a valid hour of data, as defined in paragraph (a)(2)(iii) of this section, for at least 75 percent of the operating hours.

(ii) When the period of control device operation is less than 4 hours in an operating day and more than one of the hours during the period of operation does not constitute a valid hour of data due to insufficient monitoring data.

(iii) Monitoring data are insufficient to constitute a valid hour of data, as used in paragraphs (a)(2)(i) and (ii) of this section, if measured values are unavailable for any of the 15-minute periods within the hour.

(3) Whenever a process change, as defined in § 63.115(e) of subpart G of this part, is made that causes the emission rate from a de minimis emission point to become a process vent with an emission rate of one pound per year or greater, the owner or operator shall submit a report within 180 calendar days after the process change. The report may be submitted as part of the next summary report required under § 63.10(e)(3) of subpart A of this part. The report shall include:

(i) A description of the process change; and

(ii) The results of the recalculation of the emission rate.

(b) The owner or operator of any affected BLR source, as well as the owner or operator of any affected WSR source

who elects to implement the leak detection and repair program specified in subpart H of this part, shall implement the reporting requirements outlined therein. Copies of all reports shall be retained as records for a period of 5 years, in accordance with the requirements of 40 CFR 63.10(b)(1).

(c) The owner or operator of any affected BLR source, as well as the owner

or operator of any affected WSR source that elects to comply with the emission limit for process vents, storage tanks, and wastewater systems shall include records of wastewater system monitoring parameters in the Notification of Compliance Status and summary reports required by subpart A of this part.

TABLE 1 TO SUBPART W—GENERAL PROVISIONS APPLICABILITY TO SUBPART W

| Reference                | Applies to subpart W |           |   | Comment  |
|--------------------------|----------------------|-----------|---|--|
|                          | BLR                  | WSR       | WSR alternative standard, and BLR equipment leak standard (40 CFR part 63, subpart H) |  |
| § 63.1(a)(1) .....       | Yes .....            | Yes ..... | Yes .....   | Additional terms defined in § 63.522.  |
| § 63.1(a)(2) .....       | Yes .....            | Yes ..... | Yes.  |  |
| § 63.1(a)(3) .....       | Yes .....            | Yes ..... | Yes.  |  |
| § 63.1(a)(4) .....       | Yes .....            | Yes ..... | Yes .....   |  |
| § 63.1(a)(5) .....       | N/A .....            | N/A ..... | N/A .....   | Subpart W specifies applicability of each paragraph in subpart A to subpart W. Reserved.   |
| § 63.1(a)(6) .....       | Yes .....            | Yes ..... | Yes.  |  |
| § 63.1(a)(7) .....       | Yes .....            | Yes ..... | Yes.  | Discusses State programs. Reserved.  |
| § 63.1(a)(8) .....       | No .....             | No .....  | No .....  |  |
| § 63.1(a)(9) .....       | N/A .....            | N/A ..... | N/A .....   |  |
| § 63.1(a)(10) .....      | Yes .....            | Yes ..... | Yes.  |  |
| § 63.1(a)(11) .....      | Yes .....            | Yes ..... | Yes.  | § 63.521 of subpart W specifies applicability.   |
| § 63.1(a)(12)–(14) ..... | Yes .....            | Yes ..... | Yes.  |  |
| § 63.1(b)(1) .....       | No .....             | No .....  | No .....  |  |
| § 63.1(b)(2) .....       | Yes .....            | Yes ..... | Yes.  |  |
| § 63.1(b)(3) .....       | Yes .....            | Yes ..... | Yes.  | Subpart W specifies applicability of each paragraph in subpart A to sources subject to subpart W. Area sources are not subject to subpart W. Reserved. |
| § 63.1(c)(1) .....       | Yes .....            | Yes ..... | Yes .....   |  |
| § 63.1(c)(2) .....       | No .....             | No .....  | No .....  | Subpart H specifies applicable notification requirements. Reserved.  |
| § 63.1(c)(3) .....       | N/A .....            | N/A ..... | N/A .....   |  |
| § 63.1(c)(4) .....       | Yes .....            | Yes ..... | Yes.  | Additional terms are defined in § 63.522 of subpart W; when overlap between subparts A and W occurs, subpart W takes precedence.                       |
| § 63.1(c)(5) .....       | Yes .....            | Yes ..... | No .....  |  |
| § 63.1(d) .....          | N/A .....            | N/A ..... | N/A .....   |  |
| § 63.1(e) .....          | Yes .....            | Yes ..... | Yes.  |  |
| § 63.2 .....             | Yes .....            | Yes ..... | Yes .....   | Other units used in subpart W are defined in that subpart; units of measure are spelled out for subpart H.   |
| § 63.3 .....             | Yes .....            | Yes ..... | No .....  |  |
| § 63.4(a)(1)–(3) .....   | Yes .....            | Yes ..... | Yes.  | Reserved.  |
| § 63.4(a)(4) .....       | N/A .....            | N/A ..... | N/A .....   |  |
| § 63.4(a)(5) .....       | Yes .....            | Yes ..... | Yes.  |  |
| § 63.4(b) .....          | Yes .....            | Yes ..... | Yes.  |  |
| § 63.4(c) .....          | Yes .....            | Yes ..... | Yes.  | Except replace the terms “source” and “stationary source” in § 63.5(a)(1) of subpart A with “affected source”.   |
| § 63.5(a) .....          | Yes .....            | Yes ..... | Yes .....   |  |
| § 63.5(b)(1) .....       | Yes .....            | Yes ..... | Yes.  | Reserved.  |
| § 63.5(b)(2) .....       | N/A .....            | N/A ..... | N/A .....   |  |
| § 63.5(b)(3) .....       | Yes .....            | Yes ..... | Yes.  | Reserved.  |
| § 63.5(b)(4) .....       | Yes .....            | Yes ..... | Yes.  |  |
| § 63.5(b)(5) .....       | Yes .....            | Yes ..... | Yes.  |  |
| § 63.5(b)(6) .....       | Yes .....            | Yes ..... | Yes.  |  |
| § 63.5(c) .....          | N/A .....            | N/A ..... | N/A .....   | Reserved.  |
| § 63.5(d)(1)(i) .....    | Yes .....            | Yes ..... | Yes.  |  |
| § 63.5(d)(1)(ii) .....   | Yes .....            | Yes ..... | Yes.  |  |
| § 63.5(d)(1)(iii) .....  | Yes .....            | Yes ..... | Yes.  |  |

TABLE 1 TO SUBPART W—GENERAL PROVISIONS APPLICABILITY TO SUBPART W—Continued

| Reference                      | Applies to subpart W |           |  | Comment  |
|--------------------------------|----------------------|-----------|--|--|
|                                | BLR                  | WSR       | WSR alter-<br>native stand-<br>ard, and BLR<br>equipment<br>leak stand-<br>ard (40 CFR<br>part 63, sub-<br>part H) |  |
| § 63.5(d)(2) .....             | Yes .....            | Yes ..... | Yes.   | Except replace "source" in § 63.5(f)(1) of sub-<br>part A with "affected source".  |
| § 63.5(d)(3)–(4) .....         | Yes .....            | Yes ..... | Yes.   |  |
| § 63.5(e) .....                | Yes .....            | Yes ..... | Yes.   |  |
| § 63.5(f)(1) .....             | Yes .....            | Yes ..... | Yes .....  |  |
| § 63.5(f)(2) .....             | Yes .....            | Yes ..... | Yes.   | Subpart W specifies compliance dates.  |
| § 63.6(a) .....                | Yes .....            | Yes ..... | Yes.   |  |
| § 63.6(b)(1)–(2) .....         | No .....             | No .....  | No .....   |  |
| § 63.6(b)(3)–(4) .....         | Yes .....            | Yes ..... | Yes.   |  |
| § 63.6(b)(5) .....             | Yes .....            | Yes ..... | No .....   |  |
| § 63.6(b)(6) .....             | N/A .....            | N/A ..... | N/A .....  |  |
| § 63.6(b)(7) .....             | No .....             | Yes ..... | No .....   |  |
| § 63.6(c)(1)–(2) .....         | Yes .....            | Yes ..... | Yes .....  | Subpart H includes notification requirements.<br>Reserved.   |
| § 63.6(c)(3)–(4) .....         | N/A .....            | N/A ..... | N/A .....  | Sources subject to subpart H must comply ac-<br>cording to the schedule in § 63.520 of sub-<br>part A with "affected source".                              |
| § 63.6(c)(5) .....             | Yes .....            | Yes ..... | Yes.   | Except replace "source" in § 63.6(c)(1)–(2) of<br>subpart A with "affected source".<br>Reserved.   |
| § 63.6(d) .....                | N/A .....            | N/A ..... | N/A .....  |  |
| § 63.6(e) .....                | Yes .....            | Yes ..... | Yes.   |  |
| § 63.6(f)(1) .....             | Yes .....            | Yes ..... | Yes.   |  |
| § 63.6(f)(2)(i)–(ii) .....     | Yes .....            | Yes ..... | Yes.   |  |
| § 63.6(f)(2)(iii) .....        | Yes .....            | Yes ..... | Yes.   |  |
| § 63.6(f)(2)(iv) .....         | Yes .....            | Yes ..... | Yes.   |  |
| § 63.6(f)(3) .....             | Yes .....            | Yes ..... | Yes.   |  |
| § 63.6(g) .....                | Yes .....            | Yes ..... | Yes .....  |  |
| § 63.6(h) .....                | No .....             | No .....  | No .....   |  |
| § 63.6(i)(1) .....             | Yes .....            | Yes ..... | Yes.   |  |
| § 63.6(i)(2) .....             | Yes .....            | Yes ..... | Yes .....  |  |
| § 63.6(i)(3) .....             | Yes .....            | Yes ..... | Yes.   |  |
| § 63.6(i)(4)(i) .....          | Yes .....            | Yes ..... | Yes.   |  |
| § 63.6(i)(4)(ii) .....         | Yes .....            | Yes ..... | Yes.   |  |
| § 63.6(i)(5)–(14) .....        | Yes .....            | Yes ..... | Yes.   |  |
| § 63.6(i)(15) .....            | N/A .....            | N/A ..... | N/A .....  |  |
| § 63.6(i)(16) .....            | Yes .....            | Yes ..... | Yes.   |  |
| § 63.6(j) .....                | Yes .....            | Yes ..... | Yes.   |  |
| § 63.7(a)(1) .....             | Yes .....            | Yes ..... | No .....   | Subpart H specifies required testing and com-<br>pliance procedures.   |
| § 63.7(a)(2)(i)–(vi) .....     | Yes .....            | Yes ..... | No .....   | Subpart H specifies that test results must be<br>submitted in the Notification of Compliance<br>Status due 150 days after the compliance<br>date.          |
| § 63.7(a)(2)(vii)–(viii) ..... | N/A .....            | N/A ..... | N/A .....  | Reserved.  |
| § 63.7(a)(2)(ix) .....         | Yes .....            | Yes ..... | Yes.   | Except replace "source" in § 63.7(d) of sub-<br>part A with "affected source".<br>Subpart W also contains test methods specific<br>to BLR and WSR sources. |
| § 63.7(a)(3) .....             | Yes .....            | Yes ..... | Yes.   |  |
| § 63.7(b)(1) .....             | Yes .....            | Yes ..... | Yes.   |  |
| § 63.7(b)(2) .....             | Yes .....            | Yes ..... | Yes.   |  |
| § 63.7(c) .....                | No .....             | No .....  | No.  |  |
| § 63.7(d) .....                | Yes .....            | Yes ..... | Yes .....  |  |
| § 63.7(e)(1) .....             | Yes .....            | Yes ..... | Yes .....  |  |
| § 63.7(e)(2) .....             | Yes .....            | Yes ..... | Yes.   |  |
| § 63.7(e)(3) .....             | Yes .....            | Yes ..... | No .....   |  |
| § 63.7(f) .....                | Yes .....            | Yes ..... | No .....   |  |
| § 63.7(g)(1) .....             | Yes .....            | Yes ..... | No .....   | Subpart H specifies applicable methods and<br>provides alternatives.<br>Subpart H specifies performance test report-<br>ing.                               |

TABLE 1 TO SUBPART W—GENERAL PROVISIONS APPLICABILITY TO SUBPART W—Continued

| Reference                    | Applies to subpart W |           |  | Comment  |
|------------------------------|----------------------|-----------|--|--|
|                              | BLR                  | WSR       | WSR alter-<br>native stand-<br>ard, and BLR<br>equipment<br>leak stand-<br>ard (40 CFR<br>part 63, sub-<br>part H) |  |
| § 63.7(g)(2) .....           | N/A .....            | N/A ..... | N/A .....  | Reserved.  |
| § 63.7(g)(3) .....           | Yes .....            | Yes ..... | Yes.   |  |
| § 63.7(h)(1)–(2) .....       | Yes .....            | Yes ..... | Yes.   |  |
| § 63.7(h)(3)(i) .....        | Yes .....            | Yes ..... | Yes.   |  |
| § 63.7(h)(3)(ii)–(iii) ..... | Yes .....            | Yes ..... | Yes.   |  |
| § 63.7(h)(4)–(5) .....       | Yes .....            | Yes ..... | Yes.   | Reserved.  |
| § 63.8(a)(1) .....           | Yes .....            | Yes ..... | Yes.   |  |
| § 63.8(a)(2) .....           | Yes .....            | Yes ..... | Yes.   |  |
| § 63.8(a)(3) .....           | N/A .....            | N/A ..... | N/A .....  |  |
| § 63.8(a)(4) .....           | Yes .....            | Yes ..... | Yes.   |  |
| § 63.8(b)(1) .....           | Yes .....            | Yes ..... | Yes.   | Subpart H specifies locations to conduct monitoring.                                 |
| § 63.8(b)(2) .....           | Yes .....            | Yes ..... | No .....   |  |
| § 63.8(b)(3) .....           | Yes .....            | Yes ..... | Yes.   | Subpart W specifies monitoring frequencies.  |
| § 63.8(c)(1)(i) .....        | Yes .....            | Yes ..... | Yes.   |  |
| § 63.8(c)(1)(ii) .....       | Yes .....            | Yes ..... | Yes.   |  |
| § 63.8(c)(1)(iii) .....      | Yes .....            | Yes ..... | Yes.   |  |
| § 63.8(c)(2)–(3) .....       | Yes .....            | Yes ..... | Yes.   |  |
| § 63.8(c)(4)–(8) .....       | No .....             | No .....  | No .....   |  |
| § 63.8(d) .....              | No .....             | No .....  | No.  |  |
| § 63.8(e) .....              | No .....             | No .....  | No.  |  |
| § 63.8(f)(1) .....           | Yes .....            | Yes ..... | Yes.   |  |
| § 63.8(f)(2) .....           | Yes .....            | Yes ..... | Yes.   |  |
| § 63.8(f)(3) .....           | Yes .....            | Yes ..... | Yes.   |  |
| § 63.8(f)(4) .....           | Yes .....            | Yes ..... | Yes.   |  |
| § 63.8(f)(5) .....           | Yes .....            | Yes ..... | Yes.   |  |
| § 63.8(f)(6) .....           | Yes .....            | Yes ..... | No.  |  |
| § 63.8(g) .....              | Yes .....            | Yes ..... | Yes.   |  |
| § 63.9(a) .....              | Yes .....            | Yes ..... | Yes.   |  |
| § 63.9(b)(1)(i)–(ii) .....   | Yes .....            | Yes ..... | Yes.   |  |
| § 63.9(b)(1)(iii) .....      | Yes .....            | Yes ..... | Yes.   |  |
| § 63.9(b)(2) .....           | Yes .....            | Yes ..... | Yes.   |  |
| § 63.9(b)(3) .....           | Yes .....            | Yes ..... | Yes.   |  |
| § 63.9(b)(4) .....           | Yes .....            | Yes ..... | Yes.   |  |
| § 63.9(b)(5) .....           | Yes .....            | Yes ..... | Yes.   |  |
| § 63.9(c) .....              | Yes .....            | Yes ..... | Yes.   |  |
| § 63.9(d) .....              | Yes .....            | Yes ..... | Yes.   |  |
| § 63.9(e) .....              | No .....             | No .....  | No.  |  |
| § 63.9(f) .....              | No .....             | No .....  | No.  |  |
| § 63.9(g) .....              | No .....             | No .....  | No.  |  |
| § 63.9(h)(1)–(3) .....       | Yes .....            | Yes ..... | No .....   | Separate Notification of Compliance Status requirements are specified for subpart H. |
| § 63.9(h)(4) .....           | N/A .....            | N/A ..... | N/A .....  | Reserved.  |
| § 63.9(h)(5)–(6) .....       | Yes .....            | Yes ..... | No .....   | Subpart H specifies Notification of Compliance Status requirements.                  |
| § 63.9(i) .....              | Yes .....            | Yes ..... | Yes.   | Subparts H and W specify recordkeeping requirements.                                 |
| § 63.9(j) .....              | Yes .....            | Yes ..... | Yes.   |  |
| § 63.10(a) .....             | Yes .....            | Yes ..... | Yes.   |  |
| § 63.10(b)(1) .....          | Yes .....            | Yes ..... | Yes.   |  |
| § 63.10(b)(2) .....          | No .....             | No .....  | No .....   |  |
| § 63.10(b)(3) .....          | Yes .....            | Yes ..... | Yes.   |  |
| § 63.10(c)(1)–(6) .....      | No .....             | No .....  | No.  |  |
| § 63.10(c)(7)–(8) .....      | Yes .....            | Yes ..... | Yes.   |  |
| § 63.10(c)(9)–(15) .....     | No .....             | No .....  | No.  |  |
| § 63.10(d)(1) .....          | Yes .....            | Yes ..... | No .....   |  |
| § 63.10(d)(2) .....          | Yes .....            | Yes ..... | No .....   | Subpart H specifies performance test reporting requirements.                         |
| § 63.10(d)(3) .....          | No .....             | No .....  | No.  | Subpart H specifies performance test reporting requirements.                         |
| § 63.10(d)(4) .....          | Yes .....            | Yes ..... | Yes.   |  |
| § 63.10(d)(5) .....          | Yes .....            | Yes ..... | Yes.   |  |
| § 63.10(e)(1)–(2) .....      | No .....             | No .....  | No.  |  |
| § 63.10(e)(3) .....          | Yes .....            | Yes ..... | No.  |  |

TABLE 1 TO SUBPART W—GENERAL PROVISIONS APPLICABILITY TO SUBPART W—Continued

| Reference           | Applies to subpart W |           |  | Comment |
|---------------------|----------------------|-----------|--|---------|
|                     | BLR                  | WSR       | WSR alter-<br>native stand-<br>ard, and BLR<br>equipment<br>leak stand-<br>ard (40 CFR<br>part 63, sub-<br>part H) |         |
| § 63.10(e)(4) ..... | No .....             | No .....  | No.  |         |
| § 63.10(f) .....    | Yes .....            | Yes ..... | Yes.   |         |
| § 63.11–63.15 ..... | Yes .....            | Yes ..... | Yes.   |         |

**Subpart X—National Emission Standards for Hazardous Air Pollutants From Secondary Lead Smelting**

SOURCE: 60 FR 32594, June 23, 1995, unless otherwise noted.

**§ 63.541 Applicability.**

(a) The provisions of this subpart apply to the following affected sources at all secondary lead smelters: blast, reverberatory, rotary, and electric smelting furnaces; refining kettles; agglomerating furnaces; dryers; process fugitive sources; and fugitive dust sources. The provisions of this subpart do not apply to primary lead smelters, lead refiners, or lead remelters.

(b) Table 1 of this subpart specifies the provisions of subpart A that apply and those that do not apply to owners and operators of secondary lead smelters subject to this subpart.

TABLE 1—GENERAL PROVISIONS APPLICABILITY TO SUBPART X

| Reference  | Applies to subpart X | Comment   |
|--|----------------------|---|
| 63.1 .....   | Yes.                 |   |
| 63.2 .....   | Yes.                 |   |
| 63.3 .....   | Yes.                 |   |
| 63.4 .....   | Yes.                 |   |
| 63.5 .....   | Yes.                 |   |
| 63.6 (a), (b), (c), (e), (f), (g), (i) and (j) .....                 | Yes.                 |   |
| 63.6 (d) and (h) .....   | No.                  | No opacity limits in rule.                          |
| 63.7 .....   | Yes.                 |   |
| 63.8 .....   | Yes.                 |   |
| 63.9 (a), (b), (c), (d), (e), (g), (h)(1–3), (h)(5–6), and (j) ..... | Yes.                 |   |
| 63.9 (f) and (h)(4) .....  | No.                  | No opacity or visible emission limits in subpart X. |
| 63.10 .....  | Yes.                 |   |

TABLE 1—GENERAL PROVISIONS APPLICABILITY TO SUBPART X—Continued

| Reference            | Applies to subpart X | Comment   |
|----------------------|----------------------|---|
| 63.11 .....          | No.                  | Flares will not be used to comply with the emission limits. |
| 63.12 to 63.15 ..... | Yes.                 |   |

(c) The owner or operator of any source subject to the provisions of this subpart X is subject to title V permitting requirements. These affected sources, if not major or located at major sources as defined under 40 CFR 70.2, may be deferred by the applicable title V permitting authority from title V permitting requirements for 5 years after the date on which the EPA first approves a part 70 program (i.e., until December 9, 1999). All sources receiving deferrals shall submit title V permit applications within 12 months of such date (by December 9, 2000). All sources receiving deferrals still must meet compliance schedule as stated in § 63.546.

[60 FR 32594, June 23, 1995, as amended at 61 FR 27788, June 3, 1996]

**§ 63.542 Definitions.**

Terms used in this subpart are defined in the Act, in subpart A of this part, or in this section as follows:

*Agglomerating furnace* means a furnace used to melt into a solid mass flue dust that is collected from a baghouse.

*Bag leak detection system* means systems that include, but are not limited to, devices using triboelectric, light scattering, and other effects to monitor relative or absolute particulate matter emissions.

*Battery breaking area* means the plant location at which lead-acid batteries

are broken, crushed, or disassembled and separated into components.

*Blast furnace* means a smelting furnace consisting of a vertical cylinder atop a crucible, into which lead-bearing charge materials are introduced at the top of the furnace and combustion air is introduced through tuyeres at the bottom of the cylinder, and that uses coke as a fuel source and that is operated at such a temperature in the combustion zone (greater than 980 °C) that lead compounds are chemically reduced to elemental lead metal.

*Blast furnace charging location* means the physical opening through which raw materials are introduced into a blast furnace.

*Dryer* means a chamber that is heated and that is used to remove moisture from lead-bearing materials before they are charged to a smelting furnace.

*Dryer transition piece* means the junction between a dryer and the charge hopper or conveyor, or the junction between the dryer and the smelting furnace feed chute or hopper located at the ends of the dryer.

*Electric furnace* means a smelting furnace consisting of a vessel into which reverberatory furnace slag is introduced and that uses electrical energy to heat the reverberatory furnace slag to such a temperature (greater than 980 °C) that lead compounds are reduced to elemental lead metal.

*Enclosure hood* means a hood that covers a process fugitive emission source on the top and on all sides, with openings only for access to introduce or remove materials to or from the source and through which an induced flow of air is ventilated.

*Fugitive dust source* means a stationary source of hazardous air pollutant emissions at a secondary lead smelter that is not associated with a specific process or process fugitive vent or stack. Fugitive dust sources include, but are not limited to, roadways, storage piles, materials handling transfer points, materials transport areas, storage areas, process areas, and buildings.

*Furnace and refining/casting area* means any area of a secondary lead smelter in which:

- (1) Smelting furnaces are located; or
- (2) Refining operations occur; or
- (3) Casting operations occur.

*Materials storage and handling area* means any area of a secondary lead smelter in which lead-bearing materials (including, but not limited to, broken battery components, slag, flue dust, and dross) are stored or handled between process steps including, but not limited to, areas in which materials are stored in piles, bins, or tubs, and areas in which material is prepared for charging to a smelting furnace.

*Partial enclosure* means a structure that incorporates walls or partitions on at least three sides or three-quarters of the circumference of an area to screen the material or process equipment located therein to prevent the entrainment of particulate matter into the air.

*Pavement cleaning* means the use of vacuum equipment, water sprays, or a combination thereof to remove dust or other accumulated material from the paved areas of a secondary lead smelter.

*Plant roadway* means any area of a secondary lead smelter that is subject to vehicle traffic, including traffic by fork lifts, front-end loaders, or vehicles carrying whole batteries or cast lead ingots. Excluded from this definition are employee and visitor parking areas, provided they are not subject to traffic by vehicles carrying lead-bearing materials.

*Process fugitive emission source* means a source of hazardous air pollutant emissions at a secondary lead smelter that is associated with lead smelting or refining but is not the primary exhaust stream from a smelting furnace and is not a fugitive dust source. Process fugitive sources include, but are not limited to, smelting furnace charging points, smelting furnace lead and slag taps, refining kettles, agglomerating furnaces, and drying kiln transition pieces.

*Refining kettle* means an open-top vessel that is constructed of cast iron or steel and is indirectly heated from below and contains molten lead for the purpose of refining and alloying the lead. Included are pot furnaces, receiving kettles, and holding kettles.

*Reverberatory furnace* means a refractory-lined furnace that uses one or more flames to heat the walls and roof of the furnace and lead-bearing scrap

to such a temperature (greater than 980 °C) that lead compounds are chemically reduced to elemental lead metal.

*Rotary furnace* (also known as a rotary reverberatory furnace) means a furnace consisting of a refractory-lined chamber that rotates about a horizontal axis and that uses one or more flames to heat the walls of the furnace and lead-bearing scrap to such a temperature (greater than 980 °C) that lead compounds are chemically reduced to elemental lead metal.

*Secondary lead smelter* means any facility at which lead-bearing scrap material, primarily but not limited to lead-acid batteries, is recycled into elemental lead by smelting.

*Smelting* means the chemical reduction of lead compounds to lead metal in high-temperature furnaces including, but not limited to, blast furnaces, reverberatory furnaces, rotary furnaces, and electric furnaces.

*Total enclosure* means a building with a roof and walls or partitions on all sides or the entire circumference to shelter the materials and/or process equipment located therein to prevent the entrainment of particulate matter into the air and with openings only to allow access and egress for people and vehicles.

*Vehicle wash* means a device for removing dust and other accumulated material from the wheels, body, and underside of a vehicle to prevent the inadvertent transfer of lead-contaminated material to another area of a secondary lead smelter or to public roadways.

*Wet suppression* means the use of water, water combined with a chemical surfactant, or a chemical binding agent to prevent the entrainment of dust into the air from fugitive dust sources.

**§ 63.543 Standards for process sources.**

(a) No owner or operator of a secondary lead smelter shall discharge or cause to be discharged into the atmosphere from any existing, new, or reconstructed blast, reverberatory, rotary, or electric smelting furnace any gases that contain lead compounds in excess of 2.0 milligrams of lead per dry standard cubic meter (0.00087 grains of lead per dry standard cubic foot).

(b) [Reserved]

(c) No owner or operator of a secondary lead smelter with a collocated blast furnace and reverberatory furnace shall discharge or cause to be discharged into the atmosphere from any existing, new, or reconstructed blast furnace or reverberatory furnace any gases that contain total hydrocarbons in excess of 20 parts per million by volume, expressed as propane corrected to 4 percent carbon dioxide, except as allowed under paragraphs (c)(1) and (c)(2) of this section.

(1) No owner or operator of a secondary lead smelter with a collocated blast furnace and reverberatory furnace shall discharge or cause to be discharged into the atmosphere from any existing blast furnace any gases that contain total hydrocarbons in excess of 360 parts per million by volume, expressed as propane corrected to 4 percent carbon dioxide, during periods when the reverberatory furnace is not operating.

(2) No owner or operator of a secondary lead smelter with a collocated blast furnace and reverberatory furnace shall discharge or cause to be discharged into the atmosphere from any blast furnace that commences construction or reconstruction after June 9, 1994, any gases that contain total hydrocarbons in excess of 70 parts per million by volume, expressed as propane corrected to 4 percent carbon dioxide, during periods when the reverberatory furnace is not operating.

(d) No owner or operator of a secondary lead smelter with only blast furnaces shall discharge or cause to be discharged into the atmosphere from any existing blast furnace any gases that contain total hydrocarbons in excess of 360 parts per million by volume, expressed as propane corrected to 4 percent carbon dioxide.

(e) No owner or operator of a secondary lead smelter with only blast furnaces shall discharge or cause to be discharged into the atmosphere from any blast furnace that commences construction or reconstruction after June 9, 1994, any gases that contain total hydrocarbons in excess of 70 parts per million by volume, expressed as propane corrected to 4 percent carbon dioxide.

(f) If the owner or operator of a blast furnace or collocated blast and reverberatory furnace combines the blast furnace charging process fugitive emissions with the blast furnace process emissions and discharges them to the atmosphere through a common emission point, then compliance with the applicable total hydrocarbon concentration limit under paragraph (c) of this section shall be determined downstream from the point at which the two emission streams are combined.

(g) If the owner or operator of a blast furnace or a collocated blast and rever-

beratory furnace does not combine the blast furnace charging process fugitive emissions with the blast furnace process emissions and discharges such emissions to the atmosphere through separate emission points, then the total hydrocarbon emission rate for the blast furnace process fugitive emissions shall not be greater than 0.20 kilograms per hour (0.44 pounds per hour).

(h) The standards for process sources are summarized in table 2.

TABLE 2—SUMMARY OF STANDARDS FOR PROCESS SOURCES

| Furnace configuration  | Lead compounds (milligrams per dry standard cubic meter) | Total hydrocarbons   | Citation              |
|--|--|--|-----------------------|
| Collocated reverberatory/blast (when both furnaces operating). | 2.0  | 20 parts per million by volume <sup>1</sup> .....              | § 63.543 (a), (c).    |
| (when reverberatory furnace not operating).                    | 2.0  | 360 parts per million by volume <sup>1</sup> (existing).       | § 63.543 (a), (c)(1). |
| Blast .....  | 2.0  | 70 parts per million by volume <sup>1</sup> (new) <sup>2</sup> | § 63.543 (a), (c)(2). |
|  |  | 360 parts per million by volume <sup>1</sup> (existing).       | § 63.543 (a), (d).    |
|  |  | 70 parts per million by volume <sup>1</sup> (new) <sup>2</sup> | § 63.543(e).          |
|  |  | 0.20 kilograms per hour <sup>3</sup> .....                     | § 63.543(g).          |
| Reverberatory, rotary, and electric .....                      | 2.0  | None .....   | § 63.543(a).          |

<sup>1</sup> Total hydrocarbons emission limits are as propane at 4 percent carbon dioxide to correct for dilution, based on a 3-hour average.

<sup>2</sup> New sources include those furnaces that commence construction or reconstruction after June 9, 1994.

<sup>3</sup> Applicable to blast furnace charging process fugitive emissions that are not combined with the blast furnace process emissions prior to the point at which compliance with the total hydrocarbons concentration standard is determined.

**§ 63.544 Standards for process fugitive sources.**

(a) Each owner or operator of a secondary lead smelter shall control the process fugitive emission sources listed in paragraphs (a)(1) through (a)(6) of this section by complying with either paragraph (b) or (c) of this section.

(1) Smelting furnace and dryer charging hoppers, chutes, and skip hoists;

(2) Smelting furnace lead taps and molds;

(3) Smelting furnace slag taps and molds;

(4) Refining kettles;

(5) Dryer transition pieces; and

(6) Agglomerating furnace product taps.

(b) All process fugitive emission sources listed in paragraphs (a)(1) through (a)(6) of this section shall be controlled by an enclosure hood meeting the requirements of paragraphs

(b)(1), (b)(2), or (b)(3) of this section except those meeting the requirements of paragraph (c) of this section. All enclosure hoods shall be ventilated to a control device that shall not discharge to the atmosphere any gases that contain lead compounds in excess of 2.0 milligrams of lead per dry standard cubic meter (0.00087 grains of lead per dry standard cubic foot).

(1) All process fugitive enclosure hoods except those specified for refining kettles and dryer transition pieces shall be ventilated to maintain a face velocity of at least 90 meters per minute (300 feet per minute) at all hood openings.

(2) Process fugitive enclosure hoods required for refining kettles in paragraph (a) of this section shall be ventilated to maintain a face velocity of at least 75 meters per minute (250 feet per minute).

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(3) Process fugitive enclosure hoods required over dryer transition pieces in paragraph (a) of this section shall be ventilated to maintain a face velocity of at least 110 meters per minute (350 feet per minute).

(c) All process fugitive emission sources listed in paragraphs (a)(1) through (a)(6) of this section except those controlled by hoods meeting the requirements of paragraphs (b)(1) through (b)(3) of this section shall be located in a total enclosure that is ventilated to achieve an air velocity into the enclosure at all doorway openings of not less than 75 meters per minute (250 feet per minute). This enclosure shall be ventilated to a control device

that shall not discharge to the atmosphere any gases that contain lead compounds in excess of 2.0 milligrams of lead per dry standard cubic meter (0.00087 grains per dry standard cubic foot).

(d) All dryer emission vents and agglomerating furnace emission vents shall be ventilated to a control device that shall not discharge to the atmosphere any gases that contain lead compounds in excess of 2.0 milligrams of lead per dry standard cubic meter (0.00087 grains per dry standard cubic foot).

(e) The standards for process fugitive sources are summarized in table 3.

TABLE 3—SUMMARY OF STANDARDS FOR PROCESS FUGITIVE SOURCES

| Fugitive emission source  | Control device lead compound emission limit (milligrams per dry standard cubic meter) | Enclosed hood or doorway face velocity (meters/minute) | Citation    |
|---|---|--|-------------|
| Control Option I:   |   |  |             |
| Smelting furnace and dryer charging hoppers, chutes, and skip hoists. | 2.0   | 190  | § 63.544(b) |
| Smelting furnace lead taps and molds .....                            | 2.0   | 190  | § 63.544(b) |
| Smelting furnace slag taps and molds .....                            | 2.0   | 190  | § 63.544(b) |
| Refining kettles .....  | 2.0   | 175  | § 63.544(b) |
| Dryer transition pieces .....   | 2.0   | 110  | § 63.544(b) |
| Agglomerating furnace process vents and product taps .....            | 2.0   | 190  | § 63.544(b) |
| Control Option II:  |   |  |             |
| Enclosed building ventilated to a control device .....                | 2.0   | 275  | § 63.544(c) |
| Applicable to Both Control Options:                                   |   |  |             |
| Dryer and agglomerating furnace emission vents .....                  | 2.0   | .....  | § 63.544(d) |

<sup>1</sup> Enclosure hood face velocity applicable to those process fugitive sources not located in an enclosed building ventilated to a control device.

<sup>2</sup> Building doorway air velocity measured at all doorways that are normally open during operations.

**§ 63.545 Standards for fugitive dust sources.**

(a) Each owner or operator of a secondary lead smelter shall prepare and at all times operate according to a standard operating procedures manual that describes in detail the measures that will be put in place to control fugitive dust emission sources within the areas of the secondary lead smelter listed in paragraphs (a)(1) through (a)(5) of this section.

- (1) Plant roadways;
- (2) Battery breaking area;
- (3) Furnace area;
- (4) Refining and casting area; and
- (5) Materials storage and handling area.

(b) The standard operating procedures manual shall be submitted to the Administrator or delegated authority for review and approval.

(c) The controls specified in the standard operating procedures manual shall at a minimum include the requirements of paragraphs (c)(1) through (c)(5) of this section.

(1) Plant roadways—paving of all areas subject to vehicle traffic and pavement cleaning twice per day of those areas, except on days when natural precipitation makes cleaning unnecessary or when sand or a similar material has been spread on plant roadways to provide traction on ice or snow.

(2) Battery breaking area—partial enclosure of storage piles, wet suppression applied to storage piles with sufficient frequency and quantity to prevent the formation of dust, and pavement cleaning twice per day; or total enclosure of the battery breaking area in a structure meeting the requirements of 40 CFR 265.1101(a) and (c) and ventilation of the enclosure to a control device.

(3) Furnace area—partial enclosure and pavement cleaning twice per day; or total enclosure in a structure meeting the requirements of 40 CFR 265.1101(a) and (c) and ventilation of the enclosure to a control device.

(4) Refining and casting area—partial enclosure and pavement cleaning twice per day; or total enclosure in a structure meeting the requirements of 40 CFR 265.1101(a) and (c) and ventilation of the enclosure to a control device.

(5) Materials storage and handling area—partial enclosure of storage piles, wet suppression applied to storage piles with sufficient frequency and quantity to prevent the formation of dust, vehicle wash at each exit from the area, and paving of the area; or total enclosure of the area in a structure meeting the requirements of 40 CFR 265.1101(a) and (c) and ventilation of the enclosure to a control device and a vehicle wash at each exit.

(d) The standard operating procedures manual shall require that daily records be maintained of all wet suppression, pavement cleaning, and vehicle washing activities performed to control fugitive dust emissions.

(e) No owner or operator of a secondary lead smelter shall discharge or cause to be discharged into the atmosphere from any building or enclosure ventilation system any gases that contain lead compounds in excess of 2.0 milligrams of lead per dry standard cubic meter (0.00087 grains of lead per dry standard cubic foot).

**§ 63.546 Compliance dates.**

(a) Each owner or operator of an existing secondary lead smelter shall achieve compliance with the requirements of this subpart no later than June 23, 1997.

(b) Each owner or operator of a secondary lead smelter that commences

construction or reconstruction after June 9, 1994, shall achieve compliance with the requirements of this subpart by June 23, 1995 or upon startup of operations, whichever is later.

**§ 63.547 Test methods.**

(a) The following test methods in appendix A of part 60 of this chapter in paragraphs (a)(1) through (a)(5) of this section shall be used to determine compliance with the emission standards for lead compounds under §§ 63.543(a), 63.544(b), (c), and (d), and 63.545(e):

(1) Method 1 shall be used to select the sampling port location and the number of traverse points.

(2) Method 2 shall be used to measure volumetric flow rate.

(3) Method 3 shall be used for gas analysis to determine the dry molecular weight of the stack gas.

(4) Method 4 shall be used to determine moisture content of the stack gas.

(5) Method 12 shall be used to determine compliance with the lead compound emission standards. The minimum sample volume shall be 0.85 dry standard cubic meters (30 dry standard cubic feet) and the minimum sampling time shall be 60 minutes for each run. Three runs shall be performed and the average of the three runs shall be used to determine compliance.

(b) The following test methods in appendix A of part 60 listed in paragraphs (b)(1) through (b)(5) of this section shall be used, as specified, to determine compliance with the emission standards for total hydrocarbons under § 63.543(c), (d), (e), and (g):

(1) Method 1 shall be used to select the sampling port location to determine compliance under § 63.543(c), (d), (e), and (g).

(2) Method 2 shall be used to measure volumetric flow rate to determine compliance under § 63.543(g).

(3) The Single Point Integrated Sampling and Analytical Procedure of Method 3B shall be used to measure the carbon dioxide content of the stack gases to determine compliance under § 63.543(c), (d), and (e).

(4) Method 4 shall be used to measure moisture content of the stack gases to

determine compliance under §63.543(c), (d), (e), and (g).

(5) Method 25A shall be used to measure total hydrocarbon emissions to determine compliance under §63.543(c), (d), (e), and (g). The minimum sampling time shall be 1 hour for each run. A minimum of three runs shall be performed. A 1-hour average total hydrocarbon concentration shall be determined for each run and the average of the three 1-hour averages shall be used to determine compliance. The total hydrocarbon emissions concentrations for determining compliance under §63.543(c), (d), and (e) shall be expressed as propane and shall be corrected to 4 percent carbon dioxide, as described in paragraph (c) of this section.

(c) For the purposes of determining compliance with the emission limits under §63.543(c), (d), and (e), the measured total hydrocarbon concentrations shall be corrected to 4 percent carbon dioxide as listed in paragraphs (c)(1) through (c)(2) of this section in the following manner:

(1) If the measured percent carbon dioxide is greater than 0.4 percent in each compliance test, the correction factor shall be determined by using the following equation:

$$F = \frac{4.0}{CO_2}$$

where:

F=correction factor (no units)

CO<sub>2</sub>=percent carbon dioxide measured using Method 3B, where the measured carbon dioxide is greater than 0.4 percent.

(2) If the measured percent carbon dioxide is equal to or less than 0.4 percent, then a correction factor (F) of 10 shall be used.

(3) The corrected total hydrocarbon concentration shall be determined by multiplying the measured total hydrocarbon concentration by the correction factor (F) determined for each compliance test.

(d) Compliance with the face velocity requirements under §63.544(b) and (c) for process fugitive enclosure hoods shall be determined by the following test methods in paragraph (d)(1) or (d)(2) of this section.

(1) Owners and operators shall calculate face velocity using the procedures in paragraphs (d)(1)(i) through (d)(1)(iv) of this section.

(i) Method 1 shall be used to select the sampling port location in the duct leading from the process fugitive enclosure hood to the control device.

(ii) Method 2 shall be used to measure the volumetric flow rate in the duct from the process fugitive enclosure hood to the control device.

(iii) The face area of the hood shall be determined from measurement of the hood. If the hood has access doors, then face area shall be determined with the access doors in the fully open position.

(iv) Face velocity shall be determined by dividing the volumetric flow rate determined in paragraph (d)(1)(ii) of this section by the total face area for the hood determined in paragraph (d)(1)(iii) of this section.

(2) The face velocity shall be measured directly using the procedures in paragraphs (d)(2)(i) through (d)(2)(vi) of this section.

(i) A propeller anemometer or equivalent device shall be used to measure hood face velocity.

(ii) The propeller of the anemometer shall be made of a material of uniform density and shall be properly balanced to optimize performance.

(iii) When the anemometer is mounted with the propeller shaft in a horizontal position, the threshold velocity of the anemometer shall not exceed 15 meters per minute (50 feet per minute) as determined by a procedure equivalent to that in Method 14 of appendix A of part 60.

(iv) The measurement range of the anemometer shall extend to at least 300 meters per minute (1,000 feet per minute).

(v) A known relationship shall exist between the anemometer signal output and air velocity, and the anemometer must be equipped with a suitable read-out system.

(vi) Hood face velocity shall be determined for each hood during normal operation with all access doors in the open position and by placing the anemometer in the plane of the hood opening.

(e) Owners and operators shall measure doorway air velocity to determine compliance with the doorway velocity requirement for enclosed buildings in § 63.544(c) using the procedures in paragraphs (e)(1) and (e)(2) of this section.

(1) Owners and operators shall use a propeller anemometer or equivalent device meeting the requirements of paragraphs (d)(2)(ii) through (d)(2)(v) of this section.

(2) Doorway air velocity into the building shall be determined for each doorway in the open position during normal operation by placing the anemometer in the plane of the doorway opening.

**§ 63.548 Monitoring requirements.**

(a) Owners and operators of secondary lead smelters shall prepare, and at all times operate according to, a standard operating procedures manual that describes in detail procedures for inspection, maintenance, and bag leak detection and corrective action plans for all baghouses (fabric filters) that are used to control process, process fugitive, or fugitive dust emissions from any source subject to the lead emission standards in §§ 63.543, 63.544, and 63.545, including those used to control emissions from building ventilation. This provision shall not apply to process fugitive sources that are controlled by wet scrubbers.

(b) The standard operating procedures manual for baghouses required by paragraph (a) of this section shall be submitted to the Administrator or delegated authority for review and approval.

(c) The procedures specified in the standard operating procedures manual for inspections and routine maintenance shall, at a minimum, include the requirements of paragraphs (c)(1) through (c)(12) of this section.

(1) Daily monitoring of pressure drop across each baghouse cell.

(2) Daily visual observation of baghouse discharge or stack.

(3) Daily visual inspection to ensure that dust is being removed from hoppers.

(4) Daily check of compressed air supply for pulse-jet baghouses.

(5) Daily visual inspection of isolation dampers for proper operation.

(6) Daily monitoring of cleaning cycle by observing meters or control panel instrumentation.

(7) Weekly visual inspection of bag cleaning mechanisms for proper functioning.

(8) Weekly check of bag tension on reverse air and shaker type baghouses.

(9) Monthly visual inspection of baghouse interior for air leaks.

(10) Monthly inspection of bags and bag connections.

(11) Monthly inspection of fans for wear, material buildup, and corrosion.

(12) Continuous operation of a bag leak detection system.

(d) The procedures specified in the standard operating procedures manual for maintenance shall, at a minimum, include a preventative maintenance schedule that is consistent with the baghouse manufacturer's instructions for routine and long-term maintenance.

(e) The bag leak detection system required by paragraph (c)(12) of this section, shall meet the specifications and requirements of paragraphs (e)(1) through (e)(5) of this section.

(1) The bag leak detection system must be capable of detecting particulate matter emissions at concentrations of 1.0 milligram per actual cubic meter (0.00044 grains per actual cubic foot) or less.

(2) The bag leak detection system sensor must provide output of relative or absolute particulate matter emissions.

(3) The bag leak detection system must be equipped with an alarm system that will alarm when an increase in particulate emissions is detected.

(4) For negative pressure or induced air baghouses, the bag leak detector must be installed downstream of the baghouse and upstream of any wet acid gas scrubber. For positive pressure baghouses, a bag leak detector must be installed in each baghouse compartment or cell. Where multiple detectors are required, the system's instrumentation and alarm may be shared among detectors.

(5) The bag leak detection system shall be installed and operated in a manner consistent with available guidance from the U.S. Environmental Protection Agency or, in the absence of

such guidance, the manufacturer's written specifications and recommendations for installation, operation, and calibration of the system. The calibration of the system shall, at a minimum, consist of establishing the relative baseline output level by adjusting the sensitivity and the averaging period of the device, and establishing the alarm set points and the alarm delay time. The system must be fully operational at the time of the initial lead compliance test required to demonstrate compliance with the applicable lead emission standard under §63.543, 63.544, or 63.545. The owner or operator shall not adjust the sensitivity, averaging period, alarm set points, or alarm delay time after the initial lead compliance test unless a test is performed to demonstrate compliance with the applicable lead emission standard after the adjustments are made.

(f) The standard operating procedures manual required by paragraph (a) of this section shall include a corrective action plan that specifies the procedures to be followed in the case of a bag leak detection system alarm. The corrective action plan shall include, at a minimum, the procedures used to determine and record the time and cause of the alarm as well as the corrective actions taken to correct the control device malfunction or minimize emissions as specified in paragraphs (f)(1) and (f)(2) of this section.

(1) The procedures used to determine the cause of the alarm must be initiated within 30 minutes of the alarm.

(2) The cause of the alarm must be alleviated by taking the necessary corrective action(s) which may include, but not be limited to, paragraphs (f)(1)(i) through (f)(2)(vi) of this section.

(i) Inspecting the baghouse for air leaks, torn or broken filter elements, or any other malfunction that may cause an increase in emissions.

(ii) Sealing off defective bags or filter media.

(iii) Replacing defective bags or filter media, or otherwise repairing the control device.

(iv) Sealing off a defective baghouse compartment.

(v) Cleaning the bag leak detection system probe, or otherwise repairing the bag leak detection system.

(vi) Shutting down the process producing the particulate emissions.

(g) The owner or operator of a secondary lead smelter that uses a wet scrubber to control particulate matter and metal hazardous air pollutant emissions from a process fugitive source shall monitor and record the pressure drop and water flow rate of the wet scrubber during the initial test to demonstrate compliance with the lead emission limit under §63.544(d). Thereafter, the owner or operator shall monitor and record the pressure drop and water flow rate at least once every hour and shall maintain the pressure drop and water flow rate no lower than 30 percent below the pressure drop and water flow rate measured during the initial compliance test.

(h) The owner or operator of a blast furnace or collocated reverberatory and blast furnace subject to the total hydrocarbon standards in §63.543(c), (d), or (e), must comply with the requirements of either paragraph (h)(1) or (h)(2) of this section, to demonstrate continuous compliance with the total hydrocarbon emission standards.

(1) *Continuous temperature monitoring.*

(i) The owner or operator of a blast furnace or a collocated reverberatory furnace and blast furnace subject to the total hydrocarbon emission standards in §63.543(c), (d), or (e) shall install, calibrate, maintain, and continuously operate a device to monitor and record the temperature of the afterburner or the combined blast furnace and reverberatory furnace exhaust streams consistent with the requirements for continuous monitoring systems in subpart A, General Provisions.

(ii) The owner or operator of a blast furnace or a collocated reverberatory furnace and blast furnace subject to the total hydrocarbon emission standards shall monitor and record the temperature of the afterburner or the combined blast furnace and reverberatory furnace exhaust streams every 15 minutes during the total hydrocarbon compliance test and determine an arithmetic average for the recorded temperature measurements.

(iii) To remain in compliance with the standards for total hydrocarbons, the owner or operator must maintain an afterburner or combined exhaust temperature such that the average temperature in any 3-hour period does not fall more than 28 °C (50 °F) below the average established in paragraph (h)(1)(ii) of this section. An average temperature in any 3-hour period that falls more than 28 °C (50 °F) below the average established in paragraph (h)(1)(ii) of this section, shall constitute a violation of the applicable emission standard for total hydrocarbons under § 63.543(c), (d), or (e).

(2) *Continuous monitoring of total hydrocarbon emissions.* (i) The owner or operator of a secondary lead smelter shall install, operate, and maintain a total hydrocarbon continuous monitoring system and comply with all of the requirements for continuous monitoring systems found in subpart A, General Provisions.

(ii) Allowing the 3-hour average total hydrocarbon concentration to exceed the applicable total hydrocarbon emission limit under § 63.543 shall constitute a violation of the applicable emission standard for total hydrocarbons under § 63.543(c), (d), or (e).

**§ 63.549 Notification requirements.**

(a) The owner or operator of a secondary lead smelter shall comply with all of the notification requirements of § 63.9 of subpart A, General Provisions.

(b) The owner or operator of a secondary lead smelter shall submit the fugitive dust control standard operating procedures manual required under § 63.545(a) and the standard operating procedures manual for baghouses required under § 63.548(a) to the Administrator or delegated authority along with a notification that the smelter is seeking review and approval of the these plans and procedures. Owners or operators of existing secondary lead smelters shall submit this notification no later than December 23, 1996. The owner or operator of a secondary lead smelter that commences construction or reconstruction after June 9, 1994, shall submit this notification no later than 180 days before startup of the constructed or reconstructed secondary

lead smelter, but no sooner than June 23, 1995.

**§ 63.550 Recordkeeping and reporting requirements.**

(a) Each owner or operator of a secondary lead smelter shall maintain for a period of 5 years, records of the information listed in paragraphs (a)(1) through (a)(8) of this section.

(1) The results of initial and subsequent compliance tests for lead compounds and total hydrocarbons.

(2) An identification of the date and time of all bag leak detection system alarms, their cause, and an explanation of the corrective actions taken.

(3) If an owner or operator chooses to demonstrate continuous compliance with the total hydrocarbon emission standards under § 63.543(c), (d), or (e) by employing the method allowed in § 63.548(h)(1), the records shall include the output from the continuous temperature monitor, an identification of periods when the 3-hour average temperature fell below the minimum established under § 63.548(h)(1), and an explanation of the corrective actions taken.

(4) If an owner or operator chooses to demonstrate continuous compliance with the total hydrocarbon emission standard under § 63.543(c), (d), or (e) by employing the method allowed in § 63.548(h)(2), the records shall include the output from the total hydrocarbon continuous monitoring system, an identification of the periods when the 3-hour average total hydrocarbon concentration exceeded the applicable standard and an explanation of the corrective actions taken.

(5) Records of maintenance, calibration, or other procedures required by this rule for any monitoring system used to demonstrate compliance with an applicable requirement.

(6) Any recordkeeping required as part of the practices described in the standard operating procedures manual required under § 63.545(a) for the control of fugitive dust emissions.

(7) Any recordkeeping required as part of the practices described in the standard operating procedures manual for baghouses required under § 63.548(a).

(8) Records of the pressure drop and water flow rate for wet scrubbers used

to control metal hazardous air pollutant emissions from process fugitive sources.

(b) The owner or operator of a secondary lead smelter shall comply with all of the reporting requirements under § 63.10 of the General Provisions. The submittal of reports shall be no less frequent than specified under § 63.10(e)(3) of the General Provisions. Once a source reports a violation of the standard or excess emissions, the source shall follow the reporting format required under § 63.10(e)(3) until a request to reduce reporting frequency is approved.

(c) The reports required under paragraph (b) of this section shall include the information specified in paragraphs (c)(1) through (c)(6) of this section.

(1) The report shall include records of all alarms from the bag leak detection system specified in § 63.548(e).

(2) The report shall include a description of the procedures taken following each bag leak detection system alarm pursuant to § 63.548(f)(1) and (2).

(3) The report shall include the information specified in either paragraph (c)(3)(i) or (c)(3)(ii) of this section, consistent with the monitoring option selected under § 63.548(h).

(i) A record of the temperature monitor output, in 3-hour block averages, for those periods when the temperature monitored pursuant to § 63.548(h)(1) fell below the level established in § 63.548(h)(1).

(ii) A record of the total hydrocarbon concentration, in 3-hour block averages, for those periods when the total hydrocarbon concentration being monitored pursuant to § 63.548(h)(2) exceeds the relevant limits established in § 63.543(c), (d), and (e).

(4) The reports required under paragraph (b) of this section shall contain a summary of the records maintained as part of the practices described in the standard operating procedures manual for baghouses required under § 63.548(a) including an explanation of the periods when the procedures were not followed and the corrective actions taken.

(5) The reports required under paragraph (b) of this section shall contain an identification of the periods when the pressure drop and water flow rate of wet scrubbers used to control proc-

ess fugitive sources dropped below the levels established in § 63.548(g) and an explanation of the corrective actions taken.

(6) The reports required under paragraph (b) of this section shall contain a summary of the fugitive dust control measures performed during the required reporting period, including an explanation of the periods when the procedures outlined in the standard operating procedures manual pursuant to § 63.545(a) were not followed and the corrective actions taken. The reports shall not contain copies of the daily records required to demonstrate compliance with the requirements of the standard operating procedures manuals required under §§ 63.545(a) and 63.548(a).

#### Subpart Y—National Emission Standards for Marine Tank Vessel Loading Operations

SOURCE: 61 FR 48399, Sept. 19, 1995, unless otherwise noted.

#### § 63.560 Applicability and designation of affected source.

(a) *Maximum achievable control technology (MACT) standards.* (1) The provisions of this subpart pertaining to the MACT standards in § 63.562(b) and (d) of this subpart are applicable to existing and new sources with emissions of 10 or 25 tons, as that term is defined in § 63.561, except as specified in paragraph (d) of this section, and are applicable to new sources with emissions less than 10 and 25 tons, as that term is defined in § 63.561, except as specified in paragraph (d) of this section.

(2) Existing sources with emissions less than 10 and 25 tons are not subject to the emissions standards in § 63.562(b) and (d).

(3) The recordkeeping requirements of § 63.567(j)(4) and the emission estimation requirements of § 63.565(l) apply to existing sources with emissions less than 10 and 25 tons.

(b) *Reasonably available control technology (RACT) standards.* (1) The provisions of this subpart pertaining to RACT standards in § 63.562(c) and (d) of this subpart are applicable to sources with throughput of 10 M barrels or 200 M barrels, as that term is defined in

§ 63.561, except as specified in paragraph (d) of this section.

(2) Sources with throughput less than 10 M barrels and 200 M barrels, as that term is defined in § 63.561, are not subject to the emissions standards in § 63.562(c) and (d).

(c) *General Provisions applicability.* Owners or operators of affected sources, as that term is defined in § 63.561, of this subpart must comply with the requirements of subpart A of this part in accordance with the provisions for applicability of subpart A to this subpart in Table 1 of this section.

(d) *Exemptions from MACT and RACT standards.* (1) This subpart does not apply to emissions resulting from marine tank vessel loading operations, as that term is defined in § 63.561, of commodities with vapor pressures less than 10.3 kilopascals (kPa) (1.5 pounds per square inch, absolute) (psia) at standard conditions, 20°C and 760 millimeters Hg (mm Hg).

(2) The provisions of this subpart pertaining to the MACT standards in § 63.562(b)(2), (3) and (4) and to the RACT standards in § 63.562(c)(3) and (4) do not apply to marine tank vessel loading operations where emissions are reduced by using a vapor balancing system, as that term is defined in § 63.561. The provisions pertaining to the vapor collection system, ship-to-shore compatibility, and vapor tightness of marine tank vessels in § 63.562(b)(1) and (c)(2) do apply.

(3) The provisions of this subpart pertaining to the MACT standards in § 63.562(b)(2), (3), and (4) do not apply to marine tank vessel loading operations that are contiguous with refinery operations at sources subject to and complying with subpart CC of this part, National Emissions Standards for Organic Hazardous Air Pollutants from Petroleum Refineries, except to the extent that any such provisions of this subpart are made applicable by subpart CC of this part.

(4) The provisions of this subpart pertaining to the MACT standards in § 63.562(b) and (d) do not apply to benzene emissions from marine tank vessel loading operations that are subject to and complying with 40 CFR part 61, subpart BB, National Emissions Standards for Benzene Emissions from Ben-

zene Transfer Operations, except that benzene emissions or other HAP emissions (i.e., nonbenzene HAP emissions) from marine tank vessel loading operations that are not subject to subpart BB are subject to the provisions of this subpart.

(5) The provisions of this subpart pertaining to the MACT standards in § 63.562(b) and (d) do not apply to marine tank vessel loading operations at loading berths that only transfer liquids containing organic HAP as impurities, as that term is defined in § 63.561.

(6) The provisions of this subpart do not apply to marine tank vessel loading operations at existing offshore loading terminals, as that term is defined in § 63.561.

(7) The provisions of this subpart do not apply to ballasting operations, as that term is defined in § 63.561.

(e) *Compliance dates—(1) MACT standards compliance dates, except the Valdez Marine Terminal (VMT) source.* (i) A new or existing source with emissions of 10 or 25 tons, except the VMT source, and a new source with emissions less than 10 and 25 tons, except the VMT source, that has an initial startup date on or before September 20, 1999 shall comply with the provisions of this subpart pertaining to the MACT standards in § 63.562(b) no later than 4 years after the effective date.

(ii) A new source with emissions of 10 or 25 tons, except the VMT source, and a new source with emissions less than 10 and 25 tons, except the VMT source, that has an initial startup date after September 20, 1999 shall comply with provisions of this subpart pertaining to the MACT standards in § 63.562(b) immediately upon startup.

(iii) A source with emissions less than 10 and 25 tons that increases its emissions subsequent to September 20, 1999 such that it becomes a source with emissions of 10 or 25 tons shall comply with the provisions of this subpart pertaining to the MACT standards in § 63.562(b) within 3 years following the exceedance of the threshold level.

(2) *RACT standards compliance dates, except the VMT source.* (i) A source with throughput of 10 M barrels or 200 M barrels, except the VMT source, with an initial startup date on or before

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September 21, 1998 shall comply with § 63.562(c)(1) no later than 2 years after the effective date.

(ii) A source with throughput of 10 M barrels or 200 M barrels, except the VMT source, with an initial startup date on or before September 21, 1998 shall comply with the provisions of this subpart pertaining to the RACT standards in § 63.562(c) other than § 63.562(c)(1), no later than 3 years after the effective date.

(iii) A source with throughput of 10 M barrels or 200 M barrels, except the VMT source, with an initial startup date after September 21, 1998 shall comply with the provisions of this subpart pertaining to the RACT standards in § 63.562(c) immediately upon startup.

(iv) A source with throughput less than 10 M barrels and 200 M barrels that increases its throughput subse-

quent to September 21, 1998 such that it becomes a source with throughput of 10 M barrels or 200 M barrels shall comply with the provisions of this subpart pertaining to the RACT standards in § 63.562(c) within 3 years following the exceedance of the threshold levels.

(v) A source with throughput of 10 M barrels or 200 M barrels may apply for approval from the Administrator for an extension of the compliance date of up to 1 year if it can demonstrate that the additional time is necessary for installation of the control device.

(3) *MACT and RACT compliance dates for the VMT source.* The VMT source, as that term is defined in § 63.561, shall comply with the provisions of this subpart pertaining to the MACT and RACT standards in § 63.562(d) no later than 30 months after the effective date.

TABLE 1 OF § 63.560.—GENERAL PROVISIONS APPLICABILITY TO SUBPART Y

| Reference      | Applies to affected sources in subpart Y | Comment   |
|----------------|--|---|
| 63.1(a)(1)     | Yes                                      |   |
| 63.1(a)(2)     | Yes                                      | Additional terms are defined in § 63.561; when overlap between subparts A and Y occurs, subpart Y takes precedence. |
| 63.1(a)(3)     | Yes                                      |   |
| 63.1(a)(4)     | Yes                                      | Subpart Y clarifies the applicability of each paragraph in subpart A to sources subject to subpart Y in this table. |
| 63.1(a)(5)     | No                                       | Reserved.   |
| 63.1(a)(6)     | Yes                                      |   |
| 63.1(a)(7)     | Yes                                      |   |
| 63.1(a)(8)     | Yes                                      |   |
| 63.1(a)(9)     | No                                       | Reserved.   |
| 63.1(a)(10)    | Yes                                      |   |
| 63.1(a)(11)    | Yes                                      | § 63.567(a) also allows report submissions via facsimile and on electronic media.                                   |
| 63.1(a)(12)    | Yes                                      |   |
| 63.1(a)(13)    | Yes                                      |   |
| 63.1(a)(14)    | Yes                                      |   |
| 63.1(b)(1)     | Yes                                      |   |
| 63.1(b)(2)     | Yes                                      |   |
| 63.1(b)(3)     | No                                       | § 63.560 specifies applicability.   |
| 63.1(c)(1)     | Yes                                      | Subpart Y clarifies the applicability of each paragraph in subpart A to sources subject to subpart Y in this table. |
| 63.1(c)(2)     | Yes                                      | Subpart Y is not applicable to area sources.  |
| 63.1(c)(3)     | No                                       | Reserved.   |
| 63.1(c)(4)     | Yes                                      |   |
| 63.1(c)(5)     | No                                       | § 63.560 specifies applicability.   |
| 63.1(d)        | No                                       | Reserved.   |
| 63.1(e)        | Yes                                      |   |
| 63.2           | Yes                                      | Additional terms are defined in § 63.561; when overlap between subparts A and Y occurs, subpart Y takes precedence. |
| 63.3           | Yes                                      | Other units used in subpart Y are defined in the text of subpart Y.   |
| 63.4(a)(1)     | Yes                                      |   |
| 63.4(a)(2)     | Yes                                      |   |
| 63.4(a)(3)     | Yes                                      |   |
| 63.4(a)(4)     | No                                       | Reserved.   |
| 63.4(a)(5)     | Yes                                      |   |
| 63.4(b)        | Yes                                      |   |
| 63.4(c)        | Yes                                      |   |
| 63.5(a)        | Yes                                      |   |
| 63.5(b)(1)(i)  | Yes                                      |   |
| 63.5(b)(1)(ii) | No                                       | Reserved.   |
| 63.5(b)(2)     | No                                       | Reserved.   |
| 63.5(b)(3)     | Yes                                      |   |
| 63.5(b)(4)–(5) | No                                       |   |
| 63.5(b)(6)     | Yes                                      |   |

|                          |     |   |
|--------------------------|-----|---|
| 63.5(c)                  | No  | Reserved.   |
| 63.5(d)(1)(i)            | No  | See § 63.566(b)(2).   |
| 63.5(d)(1)(ii)(A)(H)     | Yes | Reserved.   |
| 63.5(d)(1)(ii)(I)        | Yes |   |
| 63.5(d)(1)(ii)(J)        | Yes |   |
| 63.5(d)(1)(iii)          | Yes |   |
| 63.5(d)(2)-(4)           | Yes |   |
| 63.5(e)                  | Yes |   |
| 63.5(f)(1)(i) and (ii)   | No  | See § 63.566(c).  |
| 63.5(f)(1)(iii) and (iv) | No  |   |
| 63.5(f)(2)               | Yes |   |
| 63.6(a)(1)               | No  | § 63.560 specifies applicability.   |
| 63.6(a)(2)               | No  | § 63.560(e) specifies compliance dates for sources.                                   |
| 63.6(b)(1)-(6)           | No  | Reserved.   |
| 63.6(b)(6)               | No  | § 63.560(e) specifies compliance dates for sources.                                   |
| 63.6(b)(7)               | No  | § 63.560(e) specifies compliance dates for sources.                                   |
| 63.6(c)(1)               | No  |   |
| 63.6(c)(2)               | No  |   |
| 63.6(c)(3)-(4)           | No  | Reserved.   |
| 63.6(c)(5)               | No  | § 63.560(e) specifies compliance dates for sources.                                   |
| 63.6(d)                  | No  | Reserved.   |
| 63.6(e)                  | No  | See § 63.562(e).  |
| 63.6(f)(1)               | Yes |   |
| 63.6(f)(2)(i)            | Yes |   |
| 63.6(f)(2)(ii)           | No  |   |
| 63.6(f)(2)(iii)          | Yes |   |
| 63.6(f)(2)(iv)           | Yes |   |
| 63.6(f)(2)(v)            | No  | See § 63.562(e)(1).   |
| 63.6(f)(3)               | Yes |   |
| 63.6(g)                  | Yes |   |
| 63.6(h)                  | No  | No opacity monitoring is required under subpart Y.                                    |
| 63.6(i)(1)-(3)           | Yes |   |
| 63.6(i)(4)(A)            | No  |   |
| 63.6(i)(4)(B)            | Yes |   |
| 63.6(i)(4)(i)            | No  |   |
| 63.6(i)(5)-(12)          | Yes |   |
| 63.6(i)(13)              | No  |   |
| 63.6(i)(14)              | Yes |   |
| 63.6(i)(15)              | No  | Reserved.   |
| 63.6(i)(16)              | Yes |   |
| 63.6(j)                  | Yes |   |
| 63.7(a)(1)               | Yes |   |
| 63.7(a)(2)(i)-(iv)       | No  | See § 63.563(b)(1).   |
| 63.7(a)(2)(v)            | Yes |   |
| 63.7(a)(2)(vi)           | No  |   |
| 63.7(a)(2)(vii)-(viii)   | No  | Reserved.   |
| 63.7(a)(2)(ix)           | No  |   |
| 63.7(a)(3)               | Yes |   |
| 63.7(b)                  | Yes |   |
| 63.7(c)(1)-(2)           | Yes | The site-specific test plan must be submitted only if requested by the Administrator. |

TABLE 1 OF § 63.560.—GENERAL PROVISIONS APPLICABILITY TO SUBPART Y—Continued

| Reference             | Applies to affected sources in subpart Y | Comment   |
|-----------------------|--|---|
| 63.7(c)(3)(i)-(ii)(A) | Yes                                      |   |
| 63.7(c)(3)(ii)(B)     | No                                       | See § 63.565(m)(2).   |
| 63.7(c)(3)(iii)       | Yes                                      |   |
| 63.7(c)(4)            | Yes                                      |   |
| 63.7(d)               | Yes                                      |   |
| 63.7(e)               | Yes                                      |   |
| 63.7(f)               | Yes                                      |   |
| 63.7(g)(1)            | Yes                                      |   |
| 63.7(g)(2)            | No                                       | Reserved.   |
| 63.7(g)(3)            | Yes                                      |   |
| 63.7(h)               | Yes                                      |   |
| 63.8(a)(1)-(2)        | Yes                                      |   |
| 63.8(a)(3)            | No                                       | Reserved.   |
| 63.8(a)(4)            | Yes                                      |   |
| 63.8(b)(1)            | Yes                                      |   |
| 63.8(b)(2)            | No                                       |   |
| 63.8(b)(3)            | Yes                                      |   |
| 63.8(c)(1)(i)         | Yes                                      |   |
| 63.8(c)(1)(ii)        | No                                       |   |
| 63.8(c)(1)(iii)       | Yes                                      |   |
| 63.8(c)(2)            | Yes                                      |   |
| 63.8(c)(3)            | Yes                                      |   |
| 63.8(c)(4)            | No                                       | See § 63.564(a)(3).   |
| 63.8(c)(5)            | No                                       |   |
| 63.8(c)(6)            | Yes                                      |   |
| 63.8(c)(7)(i)(A)-(B)  | Yes                                      | See also performance specifications for continuous monitoring systems § 63.564(a)(4).<br>See also § 63.564(a)(5). |
| 63.8(c)(7)(i)(C)      | No                                       |   |
| 63.8(c)(7)(ii)        | Yes                                      |   |
| 63.8(c)(8)            | No                                       |   |
| 63.8(d)               | No                                       | See § 63.564(a)(5).<br>See § 63.562(e)(2)(iv).  |
| 63.8(e)(1)-(4)        | Yes                                      |   |
| 63.8(e)(5)(i)         | Yes                                      |   |
| 63.8(e)(5)(ii)        | No                                       |   |
| 63.8(f)(1)            | Yes                                      |   |
| 63.8(f)(2)(i)-(vii)   | Yes                                      |   |
| 63.8(f)(2)(viii)      | No                                       |   |
| 63.8(f)(2)(ix)        | Yes                                      |   |
| 63.8(f)(3)-(6)        | Yes                                      |   |
| 63.8(g)               | Yes                                      |   |
| 63.9(a)(1)            | Yes                                      |   |
| 63.9(a)(2)            | Yes                                      |   |
| 63.9(a)(3)            | Yes                                      |   |
| 63.9(a)(4)            | Yes                                      |   |
| 63.9(b)(1)(i)         | Yes                                      |   |

|                         |     |                         |
|-------------------------|-----|-------------------------|
| 63.9(b)(1)(iii)         | No  | See § 63.567(b)(1)      |
| 63.9(b)(1)(iii)         | Yes | See § 63.567(b)(2).     |
| 63.9(b)(2)              | No  | See § 63.567(b)(3).     |
| 63.9(b)(3)              | No  | See § 63.567(b)(4).     |
| 63.9(b)(4)              | No  | See § 63.567(b)(4).     |
| 63.9(b)(5)              | No  | See § 63.567(b)(4).     |
| 63.9(c)                 | No  | See § 63.567(c).        |
| 63.9(d)                 | No  |                         |
| 63.9(e)                 | Yes |                         |
| 63.9(f)                 | No  |                         |
| 63.9(g)(1)              | Yes |                         |
| 63.9(g)(2)              | No  |                         |
| 63.9(g)(3)              | Yes |                         |
| 63.9(h)(1)-(3)          | Yes |                         |
| 63.9(h)(4)              | No  | Reserved.               |
| 63.9(h)(5)-(6)          | Yes |                         |
| 63.9(i)                 | Yes |                         |
| 63.9(j)                 | Yes |                         |
| 63.10(a)                | Yes |                         |
| 63.10(b)(1)             | Yes |                         |
| 63.10(b)(2)(i)          | No  |                         |
| 63.10(b)(2)(ii)-(iii)   | Yes |                         |
| 63.10(b)(2)(iv)         | No  |                         |
| 63.10(b)(2)(v)          | No  |                         |
| 63.10(b)(2)(vi)-(xiv)   | Yes |                         |
| 63.10(b)(3)             | No  | See § 63.567(i)(4).     |
| 63.10(c)(1)             | Yes |                         |
| 63.10(c)(2)-(4)         | No  | Reserved.               |
| 63.10(c)(5)             | Yes |                         |
| 63.10(c)(6)             | No  | See § 63.564(a)(5).     |
| 63.10(c)(7)             | No  |                         |
| 63.10(c)(8)             | Yes |                         |
| 63.10(c)(9)             | No  | Reserved.               |
| 63.10(c)(10)-(13)       | Yes |                         |
| 63.10(c)(14)            | No  | See § 63.562(d)(2)(iv). |
| 63.10(c)(15)            | No  |                         |
| 63.10(d)(1)-(2)         | Yes |                         |
| 63.10(d)(3)             | No  |                         |
| 63.10(d)(4)             | Yes | See § 63.567(d).        |
| 63.10(d)(5)             | No  |                         |
| 63.10(e)(1)             | Yes |                         |
| 63.10(e)(2)(i)          | Yes |                         |
| 63.10(e)(2)(ii)         | Yes |                         |
| 63.10(e)(3)(i)-(v)      | No  |                         |
| 63.10(e)(3)(vi)         | Yes | See § 63.567(e)         |
| 63.10(e)(3)(vii)-(viii) | No  | See § 63.567(e)         |
| 63.10(e)(4)             | No  |                         |
| 63.10(f)                | Yes |                         |
| 63.11                   | Yes |                         |
| 63.12-63.15             | Yes |                         |

**§ 63.561 Definitions.**

As used in this subpart, all terms not defined herein shall have the meaning given them in the Clean Air Act or in subpart A of this part.

*Affected source* means a source with emissions of 10 or 25 tons, a new source with emissions less than 10 and 25 tons, a new major source offshore loading terminal, a source with throughput of 10 M barrels or 200 M barrels, or the VMT source, that is subject to the emissions standards in § 63.562.

*Air pollution control device* or *control device* means a combustion device or vapor recovery device.

*Ballasting operations* means the introduction of ballast water into a cargo tank of a tankship or oceangoing barge.

*Baseline operating parameter* means a minimum or maximum value of a process parameter, established for a control device during a performance test where the control device is meeting the required emissions reduction or established as the manufacturer recommended operating parameter, that, if achieved by itself or in combination with one or more other operating parameters, determines if a control device is operating properly.

*Boiler* means a device that combusts any fuel and produces steam or heats water or any other heat transfer medium. This term includes any duct burner that combusts fuel and is part of a combined cycle system.

*Car-seal* means a seal that is placed on a device used to change the position of a valve (e.g., from open to closed) in such a way that the position of the valve cannot be changed without breaking the seal.

*Combustion device* means all equipment, including, but not limited to, thermal incinerators, catalytic incinerators, flares, boilers, and process heaters used for combustion or destruction of organic vapors.

*Commenced* means, with respect to construction of an air pollution control device, that an owner or operator has undertaken a continuous program of construction or that an owner or operator has entered into a contractual obligation to undertake and complete, within a reasonable time, a continuous program of construction.

*Commodity* means a distinct product that a source loads onto marine tank vessels.

*Continuous* means, with respect to monitoring, reading and recording (either in hard copy or computer readable form) of data values measured at least once every 15 minutes.

*Crude oil* means a naturally occurring mixture consisting predominantly of hydrocarbons and/or sulfur, nitrogen, and oxygen derivatives of hydrocarbons that is removed from the earth in a liquid state or is capable of being so removed.

*Exceedance* or *Variance* means, with respect to parametric monitoring, the operating parameter of the air pollution control device that is monitored as an indication of proper operation of the control device is outside the acceptable range or limits for the baseline parameter given in § 63.563(b)(4) through (9).

*Excess emissions* means, with respect to emissions monitoring, the concentration of the outlet stream of the air pollution control device is outside the acceptable range or limits for the baseline concentration given in § 63.563(b)(4) through (9).

*Flow indicator* means a device that indicates whether gas flow is present in a line or vent system.

*Gasoline* means any petroleum distillate or petroleum distillate/alcohol blend having a Reid vapor pressure of 27.6 kPa (4.0 psia) or greater, that is used as a fuel for internal combustion engines.

*Impurity* means HAP substances that are present in a commodity or that are produced in a process coincidentally with the primary product or commodity and that are 0.5 percent total HAP by weight or less. An impurity does not serve a useful purpose in the production or use of the primary product or commodity and is not isolated.

*Leak* means a reading of 10,000 parts per million volume (ppmv) or greater as methane that is determined using the test methods in Method 21, appendix A of part 60 of this chapter.

*Lightering* or *Lightering operation* means the offshore transfer of a bulk liquid cargo from one marine tank vessel to another vessel.

*Loading berth* means the loading arms, pumps, meters, shutoff valves, relief valves, and other piping and valves necessary to fill marine tank vessels. The loading berth includes those items necessary for an offshore loading terminal.

*Loading cycle* means the time period from the beginning of filling a single marine tank vessel until commodity flow to the marine tank vessel ceases.

*Maintenance allowance* means a period of time that an affected source is allowed to perform maintenance on the loading berth without controlling emissions from marine tank vessel loading operations.

*Marine tank vessel loading operation* means any operation under which a commodity is bulk loaded onto a marine tank vessel from a terminal, which may include the loading of multiple marine tank vessels during one loading operation. Marine tank vessel loading operations do not include refueling of marine tank vessels.

*Marine vessel or Marine tank vessel* means any tank ship or tank barge that transports liquid product such as gasoline or crude oil in bulk.

*Nonvapor-tight* means any marine tank vessel that does not pass the required vapor-tightness test.

*Offshore loading terminal* means a location that has at least one loading berth that is 0.81 km (0.5 miles) or more from the shore that is used for mooring a marine tank vessel and loading liquids from shore.

*Primary fuel* means the fuel that provides the principal heat input to the device. To be considered primary, the fuel must be able to sustain operation of the device without the addition of other fuels.

*Process heater* means a device that transfers heat liberated by burning fuel to fluids contained in tubes, including all fluids except water that are heated to produce steam.

*Recovery device* means an individual unit of equipment, including, but not limited to, a carbon adsorber, condenser/refrigeration unit, or absorber that is capable of and used for the purpose of removing vapors and recovering liquids or chemicals.

*Routine loading* means, with respect to the VMT source, marine tank vessel

loading operations that occur as part of normal facility operation over a loading berth when no loading berths are inoperable due to maintenance.

*Secondary fuel* means any fuel other than the primary fuel. The secondary fuel provides supplementary heat in addition to the heat provided by the primary fuel and is generally fired through a burner other than the primary burner.

*Source(s)* means any location where at least one dock or loading berth is bulk loading onto marine tank vessels, except offshore drilling platforms and lightering operations.

*Source(s) with emissions less than 10 and 25 tons* means major source(s) having aggregate actual HAP emissions from marine tank vessel loading operations at all loading berths as follows:

(1) Prior to the compliance date, of less than 9.1 Mg (10 tons) of each individual HAP calculated on a 24-month annual average basis after September 19, 1997 and less than 22.7 Mg (25 tons) of all HAP combined calculated on a 24-month annual average basis after September 19, 1997, as determined by emission estimation in § 63.565(l) of this subpart; and

(2) After the compliance date, of less than 9.1 Mg (10 tons) of each individual HAP calculated annually after September 20, 1999 and less than 22.7 Mg (25 tons) of all HAP combined calculated annually after September 20, 1999, as determined by emission estimation in § 63.565(l) of this subpart.

*Source(s) with emissions of 10 or 25 tons* means major source(s) having aggregate actual HAP emissions from marine tank vessels loading operations at all loading berths as follows:

(1) Prior to the compliance date, emissions of 9.1 Mg (10 tons) or more of each individual HAP calculated on a 24-month annual average basis after September 19, 1997 or of 22.7 Mg (25 tons) or more of all HAP combined calculated on a 24-month annual average basis after September 19, 1997, as determined by emission estimation in § 63.565(l); or

(2) After the compliance date, emissions of 9.1 Mg (10 tons) or more of each individual HAP calculated annually after September 20, 1999 or of 22.7 Mg (25 tons) or more of all HAP combined calculated annually after September

20, 1999, as determined by emission estimation in § 63.565(l).

*Source(s) with throughput less than 10 M barrels and 200 M barrels* means source(s) having aggregate loading from marine tank vessel loading operations at all loading berths as follows:

(1) Prior to the compliance date, of less than 1.6 billion liters (10 million (M) barrels) of gasoline on a 24-month annual average basis and of less than 32 billion liters (200 M barrels) of crude oil on a 24-month annual average basis after September 19, 1996; and

(2) After the compliance date, of less than 1.6 billion liters (10 M barrels) of gasoline annually and of less than 32 billion liters (200 M barrels) of crude oil annually after September 21, 1998.

*Source(s) with throughput of 10 M barrels or 200 M barrels* means source(s) having aggregate loading from marine tank vessel loading operations at all loading berths as follows:

(1) Prior to the compliance date, of 1.6 billion liters (10 M barrels) or more of gasoline on a 24-month annual average basis or of 32 billion liters (200 M barrels) or more of crude oil on a 24-month annual average basis after September 19, 1996; or

(2) After the compliance date, of 1.6 billion liters (10 M barrels) or more of gasoline annually or of 32 billion liters (200 M barrels) or more of crude oil annually after September 21, 1998.

*Terminal* means all loading berths at any land or sea based structure(s) that loads liquids in bulk onto marine tank vessels.

*Twenty-four-month (24-month) annual average basis* means annual HAP emissions, with respect to MACT standards, or annual loading throughput, with respect to RACT standards, from marine tank vessel loading operations averaged over a 24-month period.

*Valdez Marine Terminal (VMT) source* means the major source that is permitted under the Trans-Alaska Pipeline Authorization Act (TAPAA) (43 U.S.C. § 1651 *et seq.*). The source is located in Valdez, Alaska in Prince William Sound.

*Vapor balancing system* means a vapor collection system or piping system that is designed to collect organic HAP vapors displaced from marine tank vessels during marine tank vessel loading

operations and that is designed to route the collected organic HAP vapors to the storage vessel from which the liquid being loaded originated or to compress collected organic HAP vapors and commingle with the raw feed of a process unit.

*Vapor collection system* means any equipment located at the source, i.e., at the terminal, that is not open to the atmosphere, that is composed of piping, connections, and flow inducing devices, and that is used for containing and transporting vapors displaced during the loading of marine tank vessels to a control device or for vapor balancing. This does not include the vapor collection system that is part of any marine vessel vapor collection manifold system.

*Vapor-tight marine vessel* means a marine tank vessel that has demonstrated within the preceding 12 months to have no leaks. A marine tank vessel loaded at less than atmospheric pressure is assumed to be vapor tight for the purpose of this standard.

*Volatile organic compounds* or *VOC* is as defined in 40 CFR 51.100(s) of this chapter.

#### § 63.562 Standards.

(a) The emissions limitations in paragraphs (b), (c), and (d) of this section apply during marine tank vessel loading operations.

(b) *MACT standards, except for the VMT source—(1)(i) Vapor collection system of the terminal.* The owner or operator of a new source with emissions less than 10 and 25 tons and an existing or new source with emissions of 10 or 25 tons shall equip each terminal with a vapor collection system that is designed to collect HAP vapors displaced from marine tank vessels during marine tank vessel loading operations and to prevent HAP vapors collected at one loading berth from passing through another loading berth to the atmosphere, except for those commodities exempted under § 63.560(d).

(ii) *Ship-to-shore compatibility.* The owner or operator of a new source with emissions less than 10 and 25 tons and an existing or new source with emissions of 10 or 25 tons shall limit marine tank vessel loading operations to those vessels that are equipped with vapor

collection equipment that is compatible with the terminal's vapor collection system, except for those commodities exempted under §63.560(d).

(iii) *Vapor tightness of marine vessels.* The owner or operator of a new source with emissions less than 10 and 25 tons and an existing or new source with emissions of 10 or 25 tons shall limit marine tank vessel loading operations to those vessels that are vapor tight and to those vessels that are connected to the vapor collection system, except for those commodities exempted under §63.560(d).

(2) *MACT standards for existing sources with emissions of 10 or 25 tons.* The owner or operator of an existing source with emissions of 10 or 25 tons, except offshore loading terminals and the VMT source, shall reduce captured HAP emissions from marine tank vessel loading operations by 97 weight-percent, as determined using methods in §63.565 (d) and (l).

(3) *MACT standards for new sources.* The owner or operator of a new source with emissions less than 10 and 25 tons or a new source with emissions of 10 or 25 tons, except offshore loading terminals and the VMT source, shall reduce HAP emissions from marine tank vessel loading operations by 98 weight-percent, as determined using methods in §63.565 (d) and (l).

(4) *MACT standards for new major source offshore loading terminals.* The owner or operator of a new major source offshore loading terminal shall reduce HAP emissions from marine tank vessel loading operations by 95 weight-percent, as determined using methods in §63.565 (d) and (l).

(5) *Prevention of carbon adsorber emissions during regeneration.* The owner or operator of a source subject to paragraph (b)(2), (3), or (4) shall prevent HAP emissions from escaping to the atmosphere from the regeneration of the carbon bed when using a carbon adsorber to control HAP emissions from marine tank vessel loading operations.

(6) *Maintenance allowance for loading berths.* The owner or operator of a source subject to paragraph (b)(2), (3) or (4), may apply for approval to the Administrator for a maintenance allowance for loading berths based on a

percent of annual throughput or annual marine tank vessel loading operation time for commodities not exempted in §63.560(d). The owner or operator shall maintain records for all maintenance performed on the air pollution control equipment. The Administrator will consider the following in approving the maintenance allowance:

(i) The owner or operator expects to be in violation of the emissions standards due to maintenance;

(ii) Due to conditions beyond the reasonable control of the owner or operator, compliance with the emissions standards during maintenance would result in unreasonable economic hardship;

(iii) The economic hardship cannot be justified by the resulting air quality benefit;

(iv) The owner or operator has given due consideration to curtailing marine vessel loading operations during maintenance;

(v) During the maintenance allowance, the owner or operator will endeavor to reduce emissions from other loading berths that are controlled as well as from the loading berth the owner or operator is seeking the maintenance allowance; and

(vi) During the maintenance allowance, the owner or operator will monitor and report emissions from the loading berth to which the maintenance allowance applies.

(c) *RACT standards, except the VMT source—(1) Commencement of construction.* The owner or operator of a source with throughput of 10 M barrels or 200 M barrels, except the VMT source, with an initial startup date on or before September 21, 1998 shall provide the Agency no later than 2 years after the effective date with proof that it has commenced construction of its vapor collection system and air pollution control device.

(2)(i) *Vapor collection system of the terminal.* The owner or operator of a source with throughput of 10 M barrels or 200 M barrels shall equip each terminal with a vapor collection system that is designed to collect VOC vapors displaced from marine tank vessels during loading and to prevent VOC vapors collected at one loading berth from passing through another loading berth to

the atmosphere, except for those commodities exempted under § 63.560(d).

(ii) *Ship-to-shore compatibility.* The owner or operator of a source with throughput of 10 M barrels or 200 M barrels shall limit marine tank vessel loading operations to those vessels that are equipped with vapor collection equipment that is compatible with the terminal's vapor collection system, except for those commodities exempted under § 63.560(d).

(iii) *Vapor tightness of marine vessels.* The owner or operator of a source with throughput of 10 M barrels or 200 M barrels shall limit marine tank vessel loading operations to those vessels that are vapor-tight and to those vessels that are connected to the vapor collection system, except for those commodities exempted under § 63.560(d).

(3) *RACT standard for sources with throughput of 10 M or 200 M barrels, except the VMT source.* The owner or operator of a source with throughput of 10 M barrels or 200 M barrels, except the VMT source, shall reduce captured VOC emissions from marine tank vessel loading operations by 98 weight-percent when using a combustion device or reduce captured VOC emissions by 95 weight-percent when using a recovery device, as determined using methods in § 63.565(d) and (l).

(4) The owner or operator of a source with throughput of 10 M barrels or 200 M barrels, except the VMT source, may meet the requirements of paragraph (c)(3) by reducing gasoline loading emissions to, at most, 1,000 ppmv outlet VOC concentration.

(5) *Prevention of carbon adsorber emissions during regeneration.* The owner or operator of a source with throughput of 10 M barrels or 200 M barrels shall prevent HAP emissions from escaping to the atmosphere from the regeneration of the carbon bed when using a carbon adsorber to control HAP emissions from marine tank vessel loading operations.

(6) *Maintenance allowance for loading berths.* The owner or operator of a source with throughput of 10 M barrels or 200 M barrels may apply for approval to the Administrator for a maintenance allowance for loading berths based on a percent of annual through-

put or annual marine tank vessel loading operation time for commodities not exempted in § 63.560(d). The owner or operator shall maintain records for all maintenance performed on the air pollution control equipment. The Administrator will consider the following in approving the maintenance allowance:

(i) The owner or operator expects to be in violation of the emissions standards due to maintenance;

(ii) Due to conditions beyond the reasonable control of the owner or operator, compliance with the emissions standards during maintenance would result in unreasonable economic hardship;

(iii) The economic hardship cannot be justified by the resulting air quality benefit;

(iv) The owner or operator has given due consideration to curtailing marine vessel loading operations during maintenance;

(v) During the maintenance allowance, the owner or operator will endeavor to reduce emissions from other loading berths that are controlled as well as from the loading berth the owner or operator is seeking the maintenance allowance; and

(vi) During the maintenance allowance, the owner or operator will monitor and report emissions from the loading berth to which the maintenance allowance applies.

(d) *MACT and RACT standards for the VMT source—(1)(i) Vapor collection system of the terminal.* The owner or operator of the VMT source shall equip each terminal subject under paragraph (d)(2) with a vapor collection system that is designed to collect HAP vapors displaced from marine tank vessels during marine tank vessel loading operations and to prevent HAP vapors collected at one loading berth from passing through another loading berth to the atmosphere, except for those commodities exempted under § 63.560(d).

(ii) *Ship-to-shore compatibility.* The owner or operator of the VMT source shall limit marine tank vessel loading operations at berths subject under paragraph (d)(2) of this section to those vessels that are equipped with vapor

collection equipment that is compatible with the terminal's vapor collection system, except for those commodities exempted under § 63.560(d).

(iii) *Vapor tightness of marine vessels.* The owner or operator of the VMT source shall limit marine tank vessel loading operations at berths subject under paragraph (d)(2) of this section to those vessels that are vapor-tight and to those vessels that are connected to the vapor collection system, except for those commodities exempted under § 63.560(d).

(2) The owner or operator of the VMT source shall reduce captured HAP and VOC emissions by 98 weight-percent, as determined using methods in § 63.565(d) and (l) for loading berths subject under this paragraph according to paragraphs (d)(2)(i), (ii), (iii), and (iv):

(i) The owner or operator of the VMT source shall equip at least two loading berths and any additional berths indicated pursuant to paragraph (d)(2)(iii) with a vapor collection system and air pollution control device and shall load marine tank vessels over loading berths equipped with a vapor collection system and control device to the maximum extent practicable. The owner or operator shall equip all loading berths that will be used for routine loading after March 19, 1998 with a vapor collection system and control device if the annual average daily loading rate for all loading berths exceeds the limits in paragraphs (d)(2)(i)(A), (B), and (C) of this section.

(A) For 1995, 1,630,000 barrels per day; and

(B) For 1996, 1,546,000 barrels per day; and

(C) For 1997, 1,445,000 barrels per day.

(ii) Maximum extent practicable means that the total annual average daily loading over all loading berths not equipped with a vapor collection system and control device shall not exceed the totals in paragraphs (d)(2)(i)(A) and (B):

(A) *Loading allowances for marine tank vessel loading operations at loading berths not equipped with control devices.* The following maximum annual average daily loading rate for routine loading at loading berths not equipped with control devices in any of the following years shall not exceed:

(1) For 1998, 275,000 barrels per day;

(2) For 1999, 205,000 barrels per day;

(3) For 2000, 118,000 barrels per day;

(4) For 2001, 39,000 barrels per day; and

(5) For 2002 and subsequent years, no marine tank vessel loading operations shall be performed at berths not equipped with a vapor collection system and control device, except as allowed for maintenance under paragraph (B).

(B) *Maintenance allowances for loading berths subject under paragraph (d)(2)(i).* Beginning in the year 2000, the owner or operator of the VMT source may have a maximum of 40 calendar days per calendar year use of loading berths not equipped with a vapor collection system and control device, in accordance with the limits in paragraph (d)(2)(i)(B)(a), (b), or (c), to allow for maintenance of loading berths subject to paragraph (d)(2)(i). Beginning in the year 2002, the total annual average daily loading of crude oil over all loading berths not equipped with a vapor collection system and control device shall not exceed the amount stated in paragraph (d)(2)(i)(B)(b). The 40 days allowed for maintenance shall be converted into a compliance measure of annual average daily loading over the loading berths not equipped with a vapor collection system and control device as follows:

(1) If the total annual average daily volume of crude oil loaded at the facility was greater than or equal to 1,100,000 barrels per day in the prior calendar year, the maintenance allowance shall not exceed an annual average daily loading of 60,000 barrels per day.

(2) If the total annual average daily volume of crude oil loaded at the facility was less than 1,100,000 barrels per day and greater than or equal to 550,000 barrels per day in the prior calendar year, the maintenance allowance for the calendar year shall not exceed  $Q_m$ :

$$Q_m = \frac{(P - 550,000) \times 40}{365}$$

Where:

$Q_m$  = maintenance allowance, barrels per day

P = prior calendar year's average daily volume of crude oil loaded at the facility, barrels per day.

(3) If the total annual average daily volume of crude oil loaded at the facility was less than 550,000 barrels per day in the prior calendar year, there shall be no maintenance allowance.

(iii) If the average daily loading rate for the loading berths not equipped with a vapor collection system and control device is greater than the combined amounts in any year listed in paragraphs (d)(2)(i)(A), (B), and (C) and (d)(2)(ii)(A) and (B), then the owner or operator of the VMT source shall equip all loading berths used for routine loading with a vapor collection system and control device within 2 years of the exceedance except that in an emergency situation the Administrator may, instead of requiring controls, approve an alternative plan to reduce loading over the unequipped berth(s) to a level which will ensure compliance with the applicable limit. Beginning in the year 2002, the owner or operator of the VMT source shall equip all uncontrolled loading berths used for marine tank vessel loading operations beyond the maintenance allowance in paragraph (d)(2)(ii)(B) with a vapor collection system and control device.

(iv) The owner or operator of the VMT source shall develop a program to communicate to relevant facility operations and marine transportation personnel and engage their active and consistent participation in honoring the intent and goal of minimizing loaded volumes over the unequipped berths and maximizing the loaded volumes at the berths equipped with a vapor collection system and control device to prevent exceedance of the load volume limits in paragraphs (d)(2)(ii)(A) and (B). This program is to be presented semi-annually during the first year of compliance and annually thereafter until the use of unequipped berths for routine loading is no longer required.

(3) The owner or operator of the VMT source shall submit annual reports on or before January 31 of each year to the Administrator certifying the annual average daily loading rate for the previous calendar year. Beginning on January 31, 1996, for the reported year 1995, the annual report shall specify the

annual average daily loading rate over all loading berths. Beginning on January 31, 1999, for the reported year 1998, the annual report shall specify the annual average daily loading rate over all loading berths, over each loading berth equipped with a vapor collection system and control device, and over each loading berth not equipped with a vapor collection system and control device. The annual average daily loading rate under this section is calculated as the total amount of crude oil loaded during the calendar year divided by 365 days or 366 days, as appropriate.

(e) *Operation and maintenance requirements for air pollution control equipment and monitoring equipment for affected sources.* At all times, including periods of startup, shutdown, and malfunction, owners or operators of affected sources shall operate and maintain a source, including associated air pollution control equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. Determination of whether acceptable operation and maintenance procedures are being used will be based on information available to the Administrator which may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source.

(1) The Administrator will determine compliance with design, equipment, work practice, or operational emission standards by evaluating an owner or operator's conformance with operation and maintenance requirements.

(2) The owner or operator of an affected source shall develop and implement a written operation and maintenance plan that describes in detail a program of corrective action for varying (i.e., exceeding baseline parameters) air pollution control equipment and monitoring equipment, based on monitoring requirements in §63.564, used to comply with these emissions standards. The plan shall also identify all routine or otherwise predictable continuous monitoring system (thermocouples, pressure transducers, continuous emissions monitors (CEMS), etc.) variances.

(i) The plan shall specify procedures (preventive maintenance) to be followed to ensure that pollution control equipment and monitoring equipment functions properly and variances of the control equipment and monitoring equipment are minimal.

(ii) The plan shall identify all operating parameters to be monitored and recorded for the air pollution control device as indicators of proper operation and shall establish the frequency at which the parameters will be monitored (see § 63.564).

(iii) Owners or operators of affected sources shall incorporate a standardized inspection schedule for each component of the control device used to comply with the emissions standards in § 63.562(b), (c), and (d). To satisfy the requirements of this paragraph, the owner or operator may use the inspection schedule recommended by the vendor of the control system or any other technical publication regarding the operation of the control system.

(iv) Owners or operators shall develop and implement a continuous monitoring system (CMS) quality control program. The owner or operator shall develop and submit to the Administrator for approval upon request a site-specific performance evaluation test plan for the CMS performance evaluation required in § 63.8(e) of subpart A of this part. Each quality control program shall include, at a minimum, a written protocol that describes procedures for initial and any subsequent calibration of the CMS; determination and adjustment of the calibration drift of the CMS; preventive maintenance of the CMS, including spare parts inventory; data recording, calculations, and reporting; and accuracy audit procedures, including sampling and analysis methods. The owner or operation shall maintain records of the procedures that are part of the quality control program developed and implemented for CMS.

(3) Based on the results of the determination made under paragraph (e)(2), the Administrator may require that an owner or operator of an affected source make changes to the operation and maintenance plan for that source. Revisions may be required if the plan:

(i) Does not address a variance of the air pollution control equipment or monitoring equipment that has occurred that increases emissions;

(ii) Fails to provide for operation during a variance of the air pollution control equipment or the monitoring equipment in a manner consistent with safety and good air pollution control practices; or

(iii) Does not provide adequate procedures for correcting a variance of the air pollution control equipment or monitoring equipment as soon as reasonable.

(4) If the operation and maintenance plan fails to address or inadequately addresses a variance event at the time the plan was initially developed, the owner or operator shall revise the operation and maintenance plan within 45 working days after such an event occurs. The revised plan shall include procedures for operating and maintaining the air pollution control equipment or monitoring equipment during similar variance events and a program for corrective action for such events.

(5) The operation and maintenance plan shall be developed by the source's compliance date. The owner or operator shall keep the written operation and maintenance plan on record to be made available for inspection, upon request, by the Administrator for the life of the source. In addition, if the operation and maintenance plan is revised, the owner or operator shall keep previous (i.e., superseded) versions of the plan on record to be made available for inspection upon request by the Administrator for a period of 5 years after each revision to the plan.

(6) To satisfy the requirements of the operation and maintenance plan, the owner or operator may use the source's standard operating procedures (SOP) manual, an Occupational Safety and Health Administration (OSHA) plan, or other existing plans provided the alternative plans meet the requirements of this section and are made available for inspection when requested by the Administrator.

**§ 63.563 Compliance and performance testing.**

(a) The following procedures shall be used to determine compliance with the

emissions limits under § 63.562(b)(1), (c)(2), and (d)(1):

(1) *Vent stream by-pass requirements for the terminal's vapor collection system.* (i) In accordance with § 63.562(b)(1)(i), (c)(2)(i), and (d)(1)(i), each valve in the terminal's vapor collection system that would route displaced vapors to the atmosphere, either directly or indirectly, shall be secured closed during marine tank vessel loading operations either by using a car-seal or a lock-and-key type configuration, or the by-pass line from the valve shall be equipped with a flow indicator, except for those valves used for pressure/vacuum relief, analyzers, instrumentation devices, sampling, and venting for maintenance. Marine tank vessel loading operations shall not be performed with open by-pass lines.

(ii) Repairs shall be made to valves, car-seals, or closure mechanisms no later than 15 days after a change in the position of the valve or a break in the car-seal or closure mechanism is detected or no later than prior to the next marine tank vessel loading operation, whichever is later.

(2) *Ship-to-shore compatibility of vapor collection systems.* Following the date on which the initial performance test is completed, marine tank vessel loading operations must be performed only if the marine tank vessel's vapor collection equipment is compatible to the terminal's vapor collection system; marine tank vessel loading operations must be performed only when the marine tank vessel's vapor collection equipment is connected to the terminal's vapor collection system, as required in § 63.562(b)(1)(ii), (c)(2)(ii), and (d)(1)(ii).

(3) *Pressure/vacuum settings for the marine tank vessel's vapor collection equipment.* During the initial performance test required in paragraph (b)(1) of this section, the owner or operator of an affected source shall demonstrate compliance with operating pressure requirements of 33 CFR 154.814 using the procedures in § 63.565(b).

(4) *Vapor-tightness requirements of the marine vessel.* The owner or operator of an affected source shall use the procedures in paragraph (a)(4)(i), (ii), (iii), or (iv) of this section to ensure that marine tank vessels are vapor tight, as re-

quired in § 63.562(b)(1)(iii), (c)(2)(iii), and (d)(1)(iii).

(i) *Pressure test documentation for determining vapor tightness of the marine vessel.* The owner or operator of a marine tank vessel, who loads commodities containing HAP not determined to be exempt under § 63.560(d) at an affected source, shall provide a copy of the vapor-tightness pressure test documentation described in § 63.567(i) for each marine tank vessel prior to loading. The date of the test listed in the documentation must be within the preceding 12 months, and the test must be conducted in accordance with the procedures in § 63.565(c)(1). Following the date on which the initial performance test is completed, the affected source must check vapor-tightness pressure test documentation for marine tank vessels loaded at positive pressure.

(ii) *Leak test documentation for determining vapor tightness of the marine vessel.* If no documentation of the vapor tightness pressure test as described in paragraph (a)(4)(i) of this section is available, the owner or operator of a marine tank vessel, who loads commodities containing HAP not determined to be exempt under § 63.560(d) at an affected source, shall provide the leak test documentation described in § 63.567(i) for each marine tank vessel prior to loading. The date of the test listed in the documentation must be within the preceding 12 months, and the test must be conducted in accordance with the procedures in § 63.565(c)(2). If the marine tank vessel has failed its most recent vapor-tightness leak test at that terminal, the owner or operator of the non-vapor-tight marine tank vessel shall provide documentation that the leaks detected during the previous vapor-tightness test have been repaired and documented with a successful vapor-tightness leak test described in § 63.565(c)(2) conducted during loading. If the owner or operator of the marine tank vessel can document that repair is technically infeasible without cleaning and gas freeing or dry-docking the vessel, the owner or operator of the affected source may load the marine tank vessel. Following the date on which the initial performance test is completed, an affected source must check the

vapor-tightness leak test documentation for marine tank vessels loaded at positive pressure.

(iii) *Leak test performed during loading using Method 21 for determining vapor tightness of the marine vessel.* If no documentation of vapor tightness as described in paragraphs (a)(4)(i) or (ii) of this section is available, the owner or operator of a marine tank vessel, who loads commodities containing HAP not determined to be exempt under § 63.560(d) at an affected source, shall perform a leak test of the marine tank vessel during marine tank vessel loading operation using the procedures described in § 63.565(c)(2).

(A) If no leak is detected, the owner or operator of a marine tank vessel shall complete the documentation described in § 63.567(i) prior to departure of the vessel.

(B) If a leak is detected, the owner or operator of the marine tank vessel shall document the vapor-tightness failure for the marine tank vessel prior to departure of the vessel. The leaking component shall be repaired prior to the next marine tank vessel loading operation at a controlled terminal unless the repair is technically infeasible without cleaning and gas freeing or dry-docking the vessel. If the owner or operator of the vessel provides documentation that repair of such equipment is technically infeasible without cleaning and gas freeing or dry-docking the vessel, the equipment responsible for the leak will be excluded from future Method 21 tests until repairs are effected. A copy of this documentation shall be maintained by the owner or operator of the affected source. Repair of the equipment responsible for the leak shall occur the next time the vessel is cleaned and gas freed or dry-docked. For repairs that are technically feasible without dry-docking the vessel, the owner or operator of the affected source shall not load the vessel again unless the marine tank vessel owner or operator can document that the equipment responsible for the leak has been repaired.

(iv) *Negative pressure loading.* The owner or operator of an affected source shall ensure that a marine tank vessel is loaded with the product tank below atmospheric pressure (i.e., at negative

gauge pressure). The pressure shall be measured between the facility's vapor connection and its manual isolation valve, and the measured pressure must be below atmospheric pressure. Following the date on which the initial performance test is completed, marine tank vessel loading operations for non-vapor-tight vessels must be performed below atmospheric pressure (i.e., at negative gauge pressure) in the product tank.

(b) *Compliance determination for affected sources.* The following procedures shall be used to determine compliance with the emissions limits under § 63.562(b), (c), and (d).

(1) *Initial performance test.* An initial performance test shall be conducted using the procedures listed in § 63.7 of subpart A of this part according to the applicability in Table 1 of § 63.560, the procedures listed in this section, and the test methods listed in § 63.565. The initial performance test shall be conducted within 180 days after the compliance date for the specific affected source. During this performance test, sources subject to MACT standards under § 63.562(b)(2), (3), (4), and (5) and (d)(2) shall determine the reduction of HAP emissions, as VOC, for all combustion or recovery devices other than flares. Sources subject to RACT standards under § 63.562(c)(3), (4), and (5) and (d)(2) shall determine the reduction of VOC emissions for all combustion or recovery devices other than flares.

(2) *Performance test exemptions.* An initial performance test required in this section and in § 63.565(d) and the continuous monitoring in § 63.564(e) is not required in the following cases:

(i) When a boiler or process heater with a design heat input capacity of 44 Megawatts or less is used to comply with § 63.562(b)(2), (3), or (4), (c)(3) or (4), or (d)(2) and the vent stream is used as the primary fuel or with the primary fuel;

(ii) When a boiler or process heater with a design heat input capacity of 44 Megawatts or greater is used to comply with § 63.562(b)(2), (3) or (4), (c)(3) or (4), or (d)(2); or

(iii) When a boiler subject to 40 CFR part 266, subpart H, "Hazardous Waste Burned in Industrial Furnaces," that

has demonstrated 99.99 percent destruction or recovery efficiency is used to comply with § 63.562(b)(2), (3), or (4), (c)(3) or (4), or (d)(2).

(3) *Operation and maintenance inspections.* If the 3-hour or 3-cycle block average operating parameters in paragraphs (b)(4) through (9) of this section, outside the acceptable operating ranges, are measured and recorded, i.e., variances of the pollution control device or monitoring equipment, the owner or operator of the affected source shall perform an unscheduled inspection of the control device and monitoring equipment and review of the parameter monitoring data. The owner or operator of the affected source shall perform an inspection and review when total parameter variance time for the control device is greater than 10 percent of the operating time for marine tank vessel loading operations on a 30-day, rolling-average basis. The inspection and review shall be conducted within 24 hours after passing the allowable variance time of 10 percent. The inspection checklist from the requirements of § 63.562(e)(2)(iii) and the monitoring data from requirements in §§ 63.562(e)(2)(ii) and 63.564 should be used to identify any maintenance problems that may be associated with the variance. The unscheduled inspection should encompass all components of the control device and monitoring equipment that can be inspected while in operation. If any maintenance problem is identified during the inspection, the owner or operator of the affected source must take corrective action (e.g., adjustments to operating controls, etc.) as soon as practicable. If no immediate maintenance problems are identified from the inspection performed while the equipment is operating, a complete inspection in accordance with § 63.562(e)(2) must be conducted prior to the next marine tank vessel loading operation and corrective action (e.g., replacement of defective parts) must be taken as soon as practicable for any maintenance problem identified during the complete inspection.

(4) *Combustion device, except flare.* During the initial performance test required in paragraph (b)(1) of this sec-

tion, the owner or operator shall determine the efficiency of and/or the outlet VOC concentration from the combustion device used to comply with § 63.562(b)(2), (3), and (4), (c)(3) and (4), and (d)(2) using the test methods in § 63.565(d). The owner or operator shall comply with paragraph (b)(4)(i) or (ii) of this section.

(i) *Outlet VOC concentration limit for required percent combustion efficiency.* The owner or operator shall establish as an operating parameter the baseline VOC concentration using the procedures described in § 63.565(g). Following the date on which the initial performance test is completed, the facility shall be operated with a block average outlet VOC concentration as determined in § 63.564(e)(1) no more than 20 percent above the baseline VOC concentration.

(ii) *Baseline temperature for required percent combustion efficiency.* The owner or operator shall establish as an operating parameter the baseline temperature using the procedures described in § 63.565(f). Following the date on which the initial performance test is completed, the facility shall be operated with the block average temperature as determined in § 63.564(e)(2) or (3) no more than 28°C (50°F) below the baseline temperature.

(5) *Flare.* During the initial performance test required in paragraph (b)(1) of this section, the owner or operator shall establish that the flare used to comply with the emissions standards in § 63.562(b)(2), (3), and (4), (c)(3) and (4), and (d)(2) is in compliance with the design requirements for flares cited in § 63.565(e). Following the date on which the initial determination of compliance is established, the facility shall operate with the presence of a pilot flame in the flare, as determined in § 63.564(f).

(6) *Carbon adsorber.* During the initial performance test required in paragraph (b)(1) of this section, the owner or operator shall determine the efficiency of and/or the outlet VOC concentration from the recovery device used to comply with § 63.562(b)(2), (3), (4), and (5), (c)(3), (4), and (5), and (d)(2) using the test methods in § 63.565(d). The owner

or operator shall comply with paragraph (b)(6)(i) as well as either paragraph (b)(6)(ii) or (iii) of this section. The owner or operator of affected sources complying with paragraph (b)(6)(ii)(B) or (C) of this section shall conduct a performance test once each year.

(i) *Compliance determination for carbon bed regeneration.* Desorbed hydrocarbons from regeneration of the off-line carbon bed shall be vented to the on-line carbon bed.

(ii) *Baseline parameters for required percent recovery efficiency.* The owner or operator shall comply with paragraph (b)(6)(ii)(A), (B), or (C) of this section.

(A) *Outlet VOC concentration limit for required percent recovery efficiency.* The owner or operator shall establish as an operating parameter the baseline VOC concentration using the procedures described in § 63.565(g). Following the date on which the initial performance test is completed, the facility shall be operated with a block average outlet VOC concentration as determined in § 63.564(g)(1) no more than 20 percent above the baseline VOC concentration.

(B) *Carbon adsorbers with vacuum regeneration.* The owner or operator shall establish as operating parameters the baseline regeneration time for the vacuum stage of carbon bed regeneration using the procedures described in § 63.565(h) and shall establish the baseline vacuum pressure (negative gauge pressure) using the procedures described in § 63.565(i). Following the date on which the initial performance test is completed, the facility shall be operated with block average regeneration time of the vacuum stage of carbon bed regeneration as determined in § 63.564(g)(2) no more than 20 percent below the baseline regeneration time, and the facility shall be operated with the block average vacuum pressure (negative gauge pressure) as determined in § 63.564(g)(2) no more than 20 percent above the baseline vacuum pressure.

(C) *Carbon adsorbers with steam regeneration.* The owner or operator shall establish as operating parameters the baseline total stream flow using the procedures described in § 63.565(j) and a baseline carbon bed temperature after cooling of the bed using the procedures

in § 63.565(f)(2). Following the date on which the initial performance test is completed, the facility shall be operated with the total stream flow, as determined in § 63.564(g)(3), no more than 20 percent below the baseline stream flow and with the carbon bed temperature (measured within 15 minutes after completion of the cooling cycle), as determined in § 63.564(g)(3), no more than 10 percent or 5.6°C (10°F) above the baseline carbon bed temperature, whichever is less stringent.

(iii) *Outlet VOC concentration of 1,000 ppmv for gasoline loading.* Following the date on which the initial performance test is completed, the facility shall operate with a block average outlet VOC concentration as determined in § 63.564(g)(1) of no more than 1,200 ppmv VOC.

(7) *Condenser/refrigeration unit.* During the initial performance test required in paragraph (b)(1) of this section, the owner or operator shall determine the efficiency of and/or the outlet VOC concentration from the recovery device used to comply with § 63.562(b)(2), (3), and (4), (c)(3) and (4), and (d)(2) using the test methods in § 63.565(d). The owner or operator shall comply with either paragraph (b)(7)(i), (ii), or (iii) of this section.

(i) *VOC outlet concentration limit for required percent recovery efficiency.* The owner or operator shall establish as an operating parameter the baseline VOC concentration using the procedures described in § 63.565(g). Following the date on which the initial performance test is completed, the facility shall be operated with a block average outlet VOC concentration as determined in § 63.564(h)(2) no more than 20 percent above the baseline VOC concentration.

(ii) *Baseline temperature for required percent recovery efficiency.* The owner or operator shall establish as an operating parameter the baseline temperature using the procedures described in § 63.565(f). Following the date on which the initial performance test is completed, the facility shall operate with a block average temperature, as determined in § 63.564(h)(1), no more than 28°C (50°F) above the baseline temperature.

(iii) *Baseline parameters for 1,000 ppmv VOC concentration limit for gasoline loading.* The owner or operator shall monitor either the outlet VOC concentration or the outlet temperature of the unit. For sources monitoring temperature, the owner or operator shall establish as an operating parameter the baseline temperature using the procedures described in § 63.565(f). Following the date on which the initial performance test is completed, the facility shall operate with a block average outlet VOC concentration, as determined in § 63.564(h)(2), of no more than 1,200 ppmv VOC or with a block average temperature, as determined in § 63.564(h)(1), no more than 28°C (50°F) above the baseline temperature.

(8) *Absorber.* During the initial performance test required in paragraph (b)(1) of this section, the owner or operator shall determine the efficiency of the absorber and/or the outlet VOC concentration from the recovery device used to comply with § 63.562(b)(2), (3), and (4), (c)(3) and (4), and (d)(2) using the test methods in § 63.565(d). The owner or operator shall comply with either paragraph (b)(8)(i) or (ii) of this section.

(i) *VOC outlet concentration limit for required percent recovery efficiency.* The owner or operator shall establish as an operating parameter the baseline VOC concentration using the procedures described in § 63.565(g). Following the date on which the initial performance test is completed, the facility shall be operated with a block average outlet VOC concentration as determined in § 63.564(i)(1) no more than 20 percent above the baseline VOC concentration.

(ii) *Baseline liquid-to-vapor ratio for required percent recovery efficiency.* The owner or operator shall establish as an operating parameter the baseline liquid flow to vapor flow (L/V) ratio using the procedures described in § 63.565(k). Following the date on which the initial performance test is completed, the facility shall operate with a block average L/V ratio, as determined in § 63.564(i)(2), no more than 20 percent below the baseline L/V ratio.

(9) *Alternative control devices.* For sources complying with § 63.562(b)(2), (3), and (4), (c)(3) and (4), and (d)(2) with the use of a control technology other

than the devices discussed in paragraphs (b)(4) through (8) of this section, the owner or operator of an affected source shall provide to the Administrator information describing the design and operation of the air pollution control system, including recommendations for the operating parameter(s) to be monitored to indicate proper operation and maintenance of the air pollution control system. Based on this information, the Administrator shall determine the operating parameter(s) to be established during the performance test. During the initial performance test required in paragraph (b)(1) of this section, the owner or operator shall determine the efficiency of the air pollution control system using the test methods in § 63.565(d). The device shall achieve at least the percent destruction efficiency or recovery efficiency required under § 63.562(b)(2), (3), and (4), (c)(3) and (4), and (d)(2). The owner or operator shall establish the operating parameter(s) approved by the Administrator. Following the date on which the initial performance test is complete, the facility shall operate either above or below a maximum or minimum operating parameter, as appropriate.

(10) *Emission estimation.* The owner or operator of a source subject to § 63.562(b)(2), (3), and (4) shall use the emission estimation procedures in § 63.565(l) to calculate HAP emissions.

(c) *Leak detection and repair for vapor collection systems and control devices.* The following procedures are required for all sources subject to § 63.562(b), (c), or (d).

(1) *Annual leak detection and repair for vapor collection systems and control devices.* The owner or operator of an affected source shall inspect and monitor all ductwork and piping and connections to vapor collection systems and control devices once each calendar year using Method 21.

(2) *Ongoing leak detection and repair for vapor collection systems and control devices.* If evidence of a potential leak is found by visual, audible, olfactory, or any other detection method, all ductwork and piping and connections to vapor collection systems and control devices shall be inspected to the extent

necessary to positively identify the potential leak and any potential leaks shall be monitored within 5 days by Method 21. Each detection of a leak shall be recorded, and the leak shall be tagged until repaired.

(3) When a leak is detected, a first effort to repair the vapor collection system and control device shall be made within 15 days or prior to the next marine tank vessel loading operation, whichever is later.

**§ 63.564 Monitoring requirements.**

(a)(1) The owner or operator of an affected source shall comply with the monitoring requirements in § 63.8 of subpart A of this part in accordance with the provisions for applicability of subpart A to this subpart in Table 1 of § 63.560 and the monitoring requirements in this section.

(2) Each owner or operator of an affected source shall monitor the parameters specified in this section. All monitoring equipment shall be installed such that representative measurements of emissions or process parameters from the source are obtained. For monitoring equipment purchased from a vendor, verification of the operational status of the monitoring equipment shall include completion of the manufacturer's written specifications or recommendations for installation, operation, and calibration of the system.

(3) Except for system breakdowns, out-of-control periods, repairs, maintenance periods, calibration checks, and zero (low-level) and high-level calibration drift adjustments, all continuous parametric monitoring systems (CPMS) and CEMS shall be in continuous operation while marine tank vessel loading operations are occurring and shall meet minimum frequency of operation requirements. Sources monitoring by use of CEMS and CPMS shall complete a minimum of one cycle of operation (sampling, analyzing, and/or data recording) for each successive 15-minute period.

(4) The owner or operator of a CMS installed in accordance with these emissions standards shall comply with the performance specifications either in performance specification (PS) 8 in 40 CFR part 60, appendix B for CEMS or

in § 63.7(c)(6) of subpart A of this part for CPMS.

(5) A CEMS is out of control when the measured values (i.e., daily calibrations, multipoint calibrations, and performance audits) exceed the limits specified in either PS 8 or in § 63.8(c)(7) of subpart A of this part. The owner or operator of a CEMS that is out of control shall submit all information concerning out of control periods, including start and end dates and hours and descriptions of corrective actions taken, in the excess emissions and continuous monitoring system performance report required in § 63.567(e).

(b) *Vapor collection system of terminal.* Owners or operators of a source complying with § 63.563(a)(1) that uses a vapor collection system that contains valves that could divert a vent stream from a control device used to comply with the provisions of this subpart shall comply with paragraph (b)(1), (2), or (3) of this section.

(1) Measure and record the vent stream flowrate of each by-pass line once every 15 minutes. The owner or operator shall install, calibrate, maintain, and operate a flow indicator and data recorder. The flow indicator shall be installed immediately downstream of any valve (i.e., entrance to by-pass line) that could divert the vent stream from the control device to the atmosphere.

(2) Measure the vent stream flowrate of each by-pass line once every 15 minutes. The owner or operator shall install, calibrate, maintain, and operate a flow indicator with either an audio or visual alarm. The flow indicator and alarm shall be installed immediately downstream of any valve (i.e., entrance to by-pass line) that could divert the vent stream from the control device to the atmosphere. The alarm shall be checked every 6 months to demonstrate that it is functioning properly.

(3) Visually inspect the seal or closure mechanism once during each marine tank vessel loading operation and at least once every month to ensure that the valve is maintained in the closed position and that the vent stream is not diverted through the by-pass line; record all times when the car seals have been broken and the valve

position has been changed. Each bypass line valve shall be secured in the closed position with a car-seal or a lock-and-key type configuration.

(c) *Pressure/vacuum settings for the marine tank vessel's vapor collection equipment.* Owners or operators of a source complying with § 63.563(a)(3) shall measure continuously the operating pressure of the marine tank vessel during loading.

(d) *Loading at negative pressure.* Owners or operators of a source complying with § 63.563(a)(4)(iv) that load vessels at less than atmospheric pressure (i.e., negative gauge pressure) shall measure and record the loading pressure. The owner or operator shall install, calibrate, maintain, and operate a recording pressure measurement device (magnehelic gauge or equivalent device) and an audible and visible alarm system that is activated when the pressure vacuum specified in § 63.563(a)(4)(iv) is not attained. The owner or operator shall place the alarm system so that it can be seen and heard where cargo transfer is controlled. The owner or operator shall verify the accuracy of the pressure device once each calendar year with a reference pressure monitor (traceable to National Institute of Standards and Technology (NIST) standards or an independent pressure measurement device dedicated for this purpose).

(e) *Combustion device, except flare.* For sources complying with § 63.563(b)(4), use of a combustion device except a flare, the owner or operator shall comply with paragraph (e)(1), (2), or (3) of this section. Owners or operators complying with paragraphs (e)(2) or (3) shall also comply with paragraph (e)(4) of this section.

(1) *Outlet VOC concentration.* Monitor the VOC concentrations at the exhaust point of the combustion device and record the output from the system. For sources monitoring the outlet VOC concentration established during the performance test, a data acquisition system shall record a concentration every 15 minutes and shall compute and record an average concentration each cycle (same time period or cycle as the performance test) and a 3-cycle block average concentration every third cycle. For sources monitoring the

1,000 ppmv VOC concentration for gasoline loading, a data acquisition system shall record a concentration every 15 minutes and shall compute and record an average concentration each hour and a 3-hour block average concentration every third hour. The owner or operator will install, calibrate, operate, and maintain a CEMS consistent with the requirements of PS 8 to measure the VOC concentration. The daily calibration requirements are required only on days when marine tank vessel loading operations occur.

(2) *Operating temperature determined during performance testing.* If the baseline temperature was established during the performance test, the data acquisition system shall record the temperature every 15 minutes and shall compute and record an average temperature each cycle (same time period or cycle of the performance test) and a 3-cycle block average every third cycle.

(3) *Manufacturer's recommended operating temperature.* If the baseline temperature is based on the manufacturer recommended operating temperature, the data acquisition system shall record the temperature every 15 minutes and shall compute and record an average temperature each hour and a 3-hour block average every third hour.

(4) *Temperature monitor.* The owner or operator shall install, calibrate, operate, and maintain a temperature monitor accurate to within  $\pm 5.6^{\circ}\text{C}$  ( $\pm 10^{\circ}\text{F}$ ) or within 1 percent of the baseline temperature, whichever is less stringent, to measure the temperature. The monitor shall be installed at the exhaust point of the combustion device but not within the combustion zone. The owner or operator shall verify the accuracy of the temperature monitor once each calendar year with a reference temperature monitor (traceable to National Institute of Standards and Technology (NIST) standards or an independent temperature measurement device dedicated for this purpose). During accuracy checking, the probe of the reference device shall be at the same location as that of the temperature monitor being tested.

(f) *Flare.* For sources complying with § 63.563(b)(5), use of a flare, the owner or operator shall monitor and record continuously the presence of the flare

pilot flame. The owner or operator shall install, calibrate, maintain, and operate a heat sensing device (an ultraviolet beam sensor or thermocouple) at the pilot light to indicate the presence of a flame during the entire loading cycle.

(g) *Carbon adsorber.* For sources complying with §63.563(b)(6), use of a carbon adsorber, the owner or operator shall comply with paragraph (g)(1), (2), or (3) of this section.

(1) *Outlet VOC concentration.* Monitor the VOC concentrations at the exhaust point of each carbon adsorber unit and record the output from the system. For sources monitoring the outlet VOC concentration established during the performance test, a data acquisition system shall record a concentration every 15 minutes and shall compute and record an average concentration each cycle (same time period or cycle as the performance test) and a 3-cycle block average concentration every third cycle. For sources monitoring the 1,000 ppmv VOC concentration for gasoline loading, a data acquisition system shall record a concentration every 15 minutes and shall compute and record an average concentration each hour and a 3-hour block average concentration every third hour. The owner or operator will install, calibrate, operate, and maintain a CEMS consistent with the requirements of PS 8 to measure the VOC concentration. The daily calibration requirements are required only on days when marine tank vessel loading operations occur.

(2) *Carbon adsorbers with vacuum regeneration.* Monitor and record the regeneration time for carbon bed regeneration and monitor and record continuously the vacuum pressure of the carbon bed regeneration cycle. The owner or operator will record the time when the carbon bed regeneration cycle begins and when the cycle ends for a single carbon bed and will calculate a 3-cycle block average every third cycle. The owner or operator shall install, calibrate, maintain, and operate a recording pressure measurement device (magnehelic gauge or equivalent device). A data acquisition system shall record and compute a 3-cycle (carbon bed regeneration cycle) block average vacuum pressure every third cycle. The

owner or operator shall verify the accuracy of the pressure device once each calendar year with a reference pressure monitor (traceable to National Institute of Standards and Technology (NIST) standards or an independent pressure measurement device dedicated for this purpose). During accuracy checking, the probe of the reference device shall be at the same location as that of the pressure monitor being tested.

(3) *Carbon adsorbers with steam regeneration.* Monitor and record the total stream mass flow and monitor and record the carbon bed temperature after regeneration (but within 15 minutes of completion of the cooling cycle). The owner or operator will install, calibrate, maintain, and operate an integrating stream flow monitoring device that is accurate within  $\pm 10$  percent and that is capable of recording the total stream mass flow for each regeneration cycle. The owner or operator will install, calibrate, maintain, and operate a temperature monitor accurate to within  $\pm 5.6^{\circ}\text{C}$  ( $10^{\circ}\text{F}$ ) or within 1 percent of the baseline carbon bed temperature, whichever is less stringent, to measure the carbon bed temperature. The monitor shall be installed at the exhaust point of the carbon bed. The data acquisition system shall record the carbon bed temperature after each cooling cycle (measured within 15 minutes of completion of the cooling cycle). The owner or operator shall verify the accuracy of the temperature monitor once each calendar year with a reference temperature monitor (traceable to National Institute of Standards and Technology (NIST) standards or an independent temperature measurement device dedicated for this purpose). During accuracy checking, the probe of the reference device shall be at the same location as that of the temperature monitor being tested.

(h) *Condenser/refrigeration unit.* For sources complying with §63.563(b)(7), use of a condenser/refrigeration unit, the owner or operator shall comply with either paragraph (h)(1) or (2) of this section.

(1) *Baseline temperature.* Monitor and record the temperature at the outlet of the unit. The owner or operator shall

install, calibrate, operate, and maintain a temperature monitor accurate to within  $\pm 5.6^{\circ}\text{C}$  ( $\pm 10^{\circ}\text{F}$ ) or within 1 percent of the baseline temperature, whichever is less stringent, to measure the temperature. The monitor shall be installed at the exhaust point of the condenser/refrigeration unit. For sources monitoring the temperature established during the performance test, the data acquisition system shall record the temperature every 15 minutes and shall compute and record an average temperature each cycle (same time period or cycle of the performance test) and a 3-hour block average every third cycle. For sources monitoring the manufacturer recommended temperature, the data acquisition system shall record the temperature every 15 minutes and shall compute and record an average temperature each hour and a 3-hour block average every third hour. The owner or operator shall verify the accuracy of the temperature monitor once each calendar year with a reference temperature monitor (traceable to National Institute of Standards and Technology (NIST) standards or an independent temperature measurement device dedicated for this purpose). During accuracy checking, the probe of the reference device shall be at the same location as that of the temperature monitor being tested.

(2) *Outlet VOC concentration.* Monitor the VOC concentrations at the outlet of the unit and record the output from the system. For sources monitoring the outlet VOC concentration established during the performance test, a data acquisition system shall record a concentration every 15 minutes and shall compute and record an average concentration each cycle (same time period or cycle as the performance test) and a 3-cycle block average concentration every third cycle. For sources monitoring the 1,000 ppmv VOC concentration for gasoline loading, a data acquisition system shall record a concentration every 15 minutes and shall compute and record an average concentration each hour and a 3-hour block average concentration every third hour. The owner or operator will install, calibrate, operate, and maintain a VOC CEMS consistent with the requirements of PS 8 to measure the

VOC concentration. The daily calibration requirements are required only on days when marine tank vessel loading operations occur.

(i) *Absorber.* For sources complying with § 63.563(b)(8), use of an absorber, the owner or operator shall comply with either paragraph (i)(1) or (2) of this section.

(1) *Outlet VOC concentration.* Monitor the VOC concentrations at the outlet of the absorber and record the output from the system. For sources monitoring the outlet VOC concentration established during the performance test, a data acquisition system shall record a concentration every 15 minutes and shall compute and record an average concentration each cycle (same time period or cycle as the performance test) and a 3-cycle block average concentration every third cycle. For sources monitoring the 1,000 ppmv VOC concentration for gasoline loading, a data acquisition system shall record a concentration every 15 minutes and shall compute and record an average concentration each hour and a 3-hour block average concentration every third hour. The owner or operator will install, calibrate, operate, and maintain a VOC CEMS consistent with the requirements of PS 8. The daily calibration requirements are required only on days when marine tank vessel loading operations occur.

(2) *L/V ratio.* Monitor and record the inlet liquid flowrate and the inlet gas flowrate to the absorber and record the calculated L/V ratio. The owner or operator shall install, calibrate, maintain, and operate liquid and gas flow indicators. For sources monitoring the L/V ratio established during the performance test, a data acquisition system shall record the flowrates and calculated ratio every 15 minutes and shall compute and record an average ratio each cycle (same time period or cycle as the performance test) and a 3-cycle block average ratio every third cycle. For sources monitoring the manufacturer recommended L/V ratio, a data acquisition system shall record the flowrates and calculated ratio every 15 minutes and shall compute and record an average ratio each hour and a 3-hour average ratio every third

hour. The liquid and gas flow indicators shall be installed immediately upstream of the respective inlet lines to the absorber.

(j) *Alternate monitoring procedures.* Alternate procedures to those described in this section may be used upon application to, and approval by, the Administrator. The owner or operator shall comply with the procedures for use of an alternative monitoring method in § 63.8(f).

#### § 63.565 Test methods and procedures.

(a) *Performance testing.* The owner or operator of an affected source in § 63.562 shall comply with the performance testing requirements in § 63.7 of subpart A of this part in accordance with the provisions for applicability of subpart A to this subpart in Table 1 of § 63.560 and the performance testing requirements in this section.

(b) *Pressure/vacuum settings of marine tank vessel's vapor collection equipment.* For the purpose of determining compliance with § 63.563(a)(3), the following procedures shall be used:

(1) Calibrate and install a pressure measurement device (liquid manometer, magnehelic gauge, or equivalent instrument) capable of measuring up to the maximum relief set pressure of the pressure-vacuum vents;

(2) Connect the pressure measurement device to a pressure tap in the terminal's vapor collection system, located as close as possible to the connection with the marine tank vessel; and

(3) During the performance test required in § 63.563(b)(1), record the pressure every 5 minutes while a marine tank vessel is being loaded and record the highest instantaneous pressure and vacuum that occurs during each loading cycle.

(c) *Vapor-tightness test procedures for the marine tank vessel.* When testing a vessel for vapor tightness to comply with the marine vessel vapor-tightness requirements of § 63.563(a)(4)(i), the owner or operator of a source shall use the methods in either paragraph (c)(1) or (2) in this section.

(1) *Pressure test for the marine tank vessel.* (i) Each product tank shall be pressurized with dry air or inert gas to

no more than the pressure of the lowest pressure relief valve setting.

(ii) Once the pressure is obtained, the dry air or inert gas source shall be shut off.

(iii) At the end of one-half hour, the pressure in the product tank and piping shall be measured. The change in pressure shall be calculated using the following formula:

$$P = P_i - P_f$$

Where:

P=change in pressure, inches of water.  
P<sub>i</sub>=pressure in tank when air/gas source is shut off, inches of water.

P<sub>f</sub>=pressure in tank at the end of one-half hour after air/gas source is shut off, inches of water.

(iv) The change in pressure, P, shall be compared to the pressure drop calculated using the following formula:

$$PM = 0.861 P_{ia} L/V$$

Where:

PM=maximum allowable pressure change, inches of water.

P<sub>ia</sub>=pressure in tank when air/gas source is shut off, psia.

L=maximum permitted loading rate of vessel, barrels per hour.

V=total volume of product tank, barrels.

(v) If  $P \leq PM$ , the vessel is vapor tight.

(vi) If  $P > PM$ , the vessel is not vapor tight and the source of the leak must be identified and repaired prior to re-testing.

(2) *Leak test for the marine tank vessel.* Each owner or operator of a source complying with §§ 63.563(a)(4)(ii) or (iii) shall use Method 21 as the vapor-tightness leak test for marine tank vessels. The test shall be conducted during the final 20 percent of loading of each product tank of the marine vessel, and it shall be applied to any potential sources of vapor leaks on the vessel.

(d) *Combustion (except flare) and recovery control device performance test procedures.* (1) All testing equipment shall be prepared and installed as specified in the appropriate test methods.

(2) All testing shall be performed during the last 20 percent of loading of a tank or compartment.

(3) All emission testing intervals shall consist of each 5 minute period during the performance test. For each

interval, the following shall be performed:

(i) *Readings.* The reading from each measurement instrument shall be recorded.

(ii) *Sampling Sites.* Method 1 or 1A of appendix A of part 60 of this chapter, as appropriate, shall be used for selection of sampling sites. Sampling sites shall be located at the inlet and outlet of the combustion device or recovery device except for owners or operators complying with the 1,000 ppmv VOC emissions limit for gasoline vapors under § 63.563(b)(6) or (7), where the sampling site shall be located at the outlet of the recovery device.

(iii) *Volume exhausted.* The volume exhausted shall be determined using Method 2, 2A, 2C, or 2D of appendix A of part 60 of this chapter, as appropriate.

(4) *Combustion devices, except flares.* The average VOC concentration in the vent upstream and downstream of the control device shall be determined using Method 25 of appendix A of part 60 of this chapter for combustion devices, except flares. The average VOC concentration shall correspond to the volume measurement by taking into account the sampling system response time.

(5) *Recovery devices.* The average VOC concentration in the vent upstream and downstream of the control device shall be determined using Method 25A of appendix A of part 60 of this chapter for recovery devices. The average VOC concentration shall correspond to the volume measurement by taking into account the sampling system response time.

(6) The VOC mass at the inlet and outlet of the combustion or recovery device during each testing interval shall be calculated as follows:

$$M_j = FKV_s C_{VOC}$$

Where:

$M_j$ =mass of VOC at the inlet and outlet of the combustion or recovery device during testing interval j, kilograms (kg).

$F=10^{-6}$ =conversion factor, (cubic meters VOC/cubic meters air)(1/ppmv) ( $m^3$  VOC/ $m^3$  air)(1/ppmv).

$K$ =density, kilograms per cubic meter ( $kg/m^3$  VOC), standard conditions, 20 °C and 760 mm Hg.

$V_s$ =volume of air-vapor mixture at the inlet and outlet of the combustion or recovery device, cubic meters ( $m^3$ ) at standard conditions, 20 °C and 760 mm Hg.

$C_{VOC}$ =VOC concentration (as measured) at the inlet and outlet of the combustion or recovery device, ppmv, dry basis.

$s$ =standard conditions, 20 °C and 760 mm Hg.

(7) The VOC mass emission rates at the inlet and outlet of the recovery or combustion device shall be calculated as follows:

$$E_i = \frac{\sum_{j=1}^n M_{ij}}{T}$$

$$E_o = \frac{\sum_{j=1}^n M_{oj}}{T}$$

Where:

$E_i, E_o$ =mass flow rate of VOC at the inlet (i) and outlet (o) of the recovery or combustion device, kilogram per hour (kg/hr).

$M_{ij}, M_{oj}$ =mass of VOC at the inlet (i) or outlet (o) during testing interval j, kg.

$T$ =Total time of all testing intervals, hour.

$n$ =number of testing intervals.

(8) Where Method 25 or 25A is used to measure the percent reduction in VOC, the percent reduction across the combustion or recovery device shall be calculated as follows:

$$R = \frac{E_i - E_o}{E_i} (100\%)$$

Where:

$R$ =control efficiency of control device, percent.

$E_i$ =mass flow rate of VOC at the inlet to the combustion or recovery device as calculated under paragraph (c)(7) of this section, kg/hr.

$E_o$ =mass flow rate of VOC at the outlet of the combustion or recovery device, as calculated under paragraph (c)(7) of this section, kg/hr.

(9) Repeat the procedures in paragraph (d)(1) through (d)(8) of this section 3 times. The arithmetic average percent efficiency of the three runs shall determine the overall efficiency of the control device.

(10) Use of methods other than Method 25 or Method 25A shall be validated pursuant to Method 301 of appendix A of part 63 of this chapter.

(e) *Performance test for flares.* When a flare is used to comply with § 63.562(b)(2), (3), and (4), (c)(3) and (4), and (d)(2), the source must demonstrate that the flare meets the requirements of § 63.11 of subpart A of this part. In addition, a performance test according to Method 22 of appendix A of part 63 shall be performed to determine visible emissions. The observation period shall be at least 2 hours and shall be conducted according to Method 22. Performance testing shall be conducted during three complete loading cycles with a separate test run for each loading cycle. The observation period for detecting visible emissions shall encompass each loading cycle. Integrated sampling to measure process vent stream flow rate shall be performed continuously during each loading cycle. The owner or operator shall record all visible emission readings, heat content determinations, flow rate measurements, maximum permitted velocity calculations, and exit velocity determinations made during the performance test.

(f) *Baseline temperature.* The procedures in this paragraph shall be used to determine the baseline temperature required in § 63.563(b)(4), (6), and (7) for combustion devices, carbon adsorber beds, and condenser/refrigeration units, respectively, and to monitor the temperature as required in § 63.564(e), (g), and (h). The owner or operator shall comply with either paragraph (f)(1) or (2) of this section.

(1) *Baseline temperature from performance testing.* The owner or operator shall establish the baseline temperature as the temperature at the outlet point of the unit averaged over three test runs from paragraph (d) of this section. Temperature shall be measured every 15 minutes.

(2) *Baseline temperature from manufacturer.* The owner or operator shall es-

tablish the baseline temperature as the manufacturer recommended minimum operating temperature for combustion devices, maximum operating temperature for condenser units, and maximum operating temperature for carbon beds of carbon adsorbers.

(g) *Baseline outlet VOC concentration.* The procedures in this paragraph shall be used to determine the outlet VOC concentration required in § 63.563(b)(4), (6), (7), and (8) for combustion devices except flare, carbon adsorbers, condenser/refrigeration units, and absorbers, respectively, and to monitor the VOC concentration as required in § 63.564(e), (g), (h), and (i). The owner or operator shall use the procedures outlined in Method 25A. For the baseline VOC concentration, the arithmetic average of the outlet VOC concentration from three test runs from paragraph (d) of this section shall be calculated for the control device. The VOC concentration shall be measured at least every 15 minutes. Compliance testing of VOC CEMS shall be performed using PS 8.

(h) *Baseline regeneration time for carbon bed regeneration.* The procedures in this paragraph shall be used to demonstrate the baseline regeneration time for the vacuum stage of carbon bed regeneration required in § 63.563(b)(6) for a carbon adsorber and to monitor the regeneration time for the vacuum regeneration as required in § 63.564(g). The owner or operator shall comply with paragraph (h)(1) or (2).

(1) *Baseline regeneration time from performance testing.* The owner or operator shall establish the baseline regeneration time as the length of time for the vacuum stage of carbon bed regeneration averaged over three test runs from paragraph (d) of this section.

(2) *Baseline regeneration time from manufacturer recommendation.* The owner or operator shall establish the baseline regeneration time as the manufacturer recommended minimum regeneration time for the vacuum stage of carbon bed regeneration.

(i) *Baseline vacuum pressure for carbon bed regeneration.* The procedures in this paragraph shall be used to demonstrate the baseline vacuum pressure for the

vacuum stage of carbon bed regeneration required in §63.563(b)(6) for a carbon adsorber and to monitor the vacuum pressure as required in §63.564(g). The owner or operator shall establish the baseline vacuum pressure as the manufacturer recommended minimum vacuum for carbon bed regeneration.

(j) *Baseline total stream flow.* The procedures in this paragraph shall be used to demonstrate the baseline total stream flow for steam regeneration required in §63.563(b)(6) for a carbon adsorber and to monitor the total stream flow as required in §63.564(g). The owner or operator shall establish the baseline stream flow as the manufacturer recommended minimum total stream flow for carbon bed regeneration.

(k) *Baseline L/V ratio.* The procedures in this paragraph shall be used to determine the baseline L/V ratio required in §63.563(b)(8) for an adsorber and to monitor the L/V ratio as required in §63.564(i). The owner or operator shall comply with either paragraph (k)(1) or (2) of this section.

(1) *Baseline L/V ratio from performance test.* The owner or operator shall establish the baseline L/V ratio as the calculated value of the inlet liquid flow divided by the inlet gas flow to the adsorber averaged over three test runs using the procedures in paragraph (d) of this section.

(2) *Baseline L/V ratio from manufacturer.* The owner or operator shall establish the baseline L/V ratio as the manufacturer recommended minimum L/V ratio for adsorber operation.

(l) *Emission estimation procedures.* For sources with emissions less than 10 or 25 tons and sources with emissions of 10 or 25 tons, the owner or operator shall calculate an annual estimate of HAP emissions, excluding commodities exempted by §63.560(d), from marine tank vessel loading operations. Emission estimates and emission factors shall be based on test data, or if test data is not available, shall be based on measurement or estimating techniques generally accepted in industry practice for operating conditions at the source.

(m) *Alternate test procedures.* (1) Alternate test procedures to those described in this section may be used upon appli-

cation to, and approval by, the Administrator.

(2) If the owner or operator intends to demonstrate compliance by using an alternative to any test method specified, the owner or operator shall refrain from conducting the performance test until the Administrator approves the use of the alternative method when the Administrator approves the site-specific test plan (if review of the site-specific test plan is requested) or until after the alternative method is approved (see §63.7(f) of subpart A of this part). If the Administrator does not approve the site-specific test plan (if review is requested) or the use of the alternative method within 30 days before the test is scheduled to begin, the performance test dates specified in §63.563(b)(1) shall be extended such that the owner or operator shall conduct the performance test within 60 calendar days after the Administrator approves the site-specific test plan or after use of the alternative method is approved. Notwithstanding the requirements in the preceding two sentences, the owner or operator may proceed to conduct the performance test as required in this section (without the Administrator's prior approval of the site-specific test plan) if he/she subsequently chooses to use the specified testing and monitoring methods instead of an alternative.

#### **§63.566 Construction and reconstruction.**

(a) The owner or operator of an affected source shall fulfill all requirements for construction or reconstruction of a source in §63.5 of subpart A of this part in accordance with the provisions for applicability of subpart A to this subpart in Table 1 of §63.560 and construction or reconstruction requirements in this section.

(b)(1) *Application for approval of construction or reconstruction.* The provisions of this paragraph and §63.5(d)(1)(ii) and (iii), (2), (3), and (4) of subpart A implement section 112(i)(1) of the Act.

(2) *General application requirements.* An owner or operator who is subject to the requirements of §63.5(b)(3) of subpart A shall submit to the Administrator an application for approval of

the construction of a new source, the reconstruction of a source, or the reconstruction of a source not subject to the emissions standards in § 63.562 such that the source becomes an affected source. The application shall be submitted as soon as practicable before the construction or reconstruction is planned to commence. The application for approval of construction or reconstruction may be used to fulfill the initial notification requirements of § 63.567(b)(3). The owner or operator may submit the application for approval well in advance of the date construction or reconstruction is planned to commence in order to ensure a timely review by the Administrator and that the planned commencement date will not be delayed.

(c) *Approval of construction or reconstruction based on prior State preconstruction review.* The owner or operator shall submit to the Administrator the request for approval of construction or reconstruction under this paragraph and § 63.5(f)(1) of subpart A of this part no later than the application deadline specified in paragraph (b)(2) of this section. The owner or operator shall include in the request information sufficient for the Administrator's determination. The Administrator will evaluate the owner or operator's request in accordance with the procedures specified in § 63.5(e) of subpart A of this part. The Administrator may request additional relevant information after the submittal of a request for approval of construction or reconstruction.

**§ 63.567 Recordkeeping and reporting requirements.**

(a) The owner or operator of an affected source shall fulfill all reporting and recordkeeping requirements in §§ 63.9 and 63.10 of subpart A of this part in accordance with the provisions for applicability of subpart A to this subpart in Table 1 of § 63.560 and fulfill all reporting and recordkeeping requirements in this section. These reports will be made to the Administrator at the appropriate address identified in § 63.13 of subpart A of this part.

(1) Reports required by subpart A and this section may be sent by U.S. mail, facsimile (fax), or by another courier.

(i) Submittals sent by U.S. mail shall be postmarked on or before the specified date.

(ii) Submittals sent by other methods shall be received by the Administrator on or before the specified date.

(2) If acceptable to both the Administrator and the owner or operator of a source, reports may be submitted on electronic media.

(b) *Notification requirements.* The owner or operator of an affected source shall fulfill all notification requirements in § 63.9 of subpart A of this part in accordance with the provisions for applicability of that section to this subpart in Table 1 of § 63.560 and the notification requirements in this paragraph.

(1) *Applicability.* If a source that otherwise would not be subject to the emissions standards subsequently increases its HAP emissions calculated on a 24-month annual average basis after September 19, 1997 or increases its annual HAP emissions after September 20, 1999 or subsequently increases its gasoline or crude loading throughput calculated on a 24-month annual average basis after September 19, 1996 or increases its gasoline or crude loading annual throughput after September 21, 1998 such that the source becomes subject to the emissions standards, such source shall be subject to the notification requirements of § 63.9 of subpart A of this part and the notification requirements of this paragraph.

(2) *Initial notification for sources with startup before the effective date.* The owner or operator of a source with initial startup before the effective date shall notify the Administrator in writing that the source is subject to the relevant standard. The notification shall be submitted not later than 365 days after the effective date of the emissions standards and shall provide the following information:

(i) The name and address of the owner or operator;

(ii) The address (i.e., physical location) of the source;

(iii) An identification of this emissions standard that is the basis of the notification and the source's compliance date;

(iv) A brief description of the nature, size, design, and method of operation of the source;

(v) A statement that the source is a major source.

(3) *Initial notification for sources with startup after the effective date.* The owner or operator of a new or reconstructed source or a source that has been reconstructed such that it is subject to the emissions standards that has an initial startup after the effective date but before the compliance date, and for which an application for approval of construction or reconstruction is not required under § 63.5(d) of subpart A of this part and § 63.566 of this subpart, shall notify the Administrator in writing that the source is subject to the standard no later than 365 days or 120 days after initial startup, whichever occurs before notification of the initial performance test in § 63.9(e) of subpart A of this part. The notification shall provide all the information required in paragraph (b)(2) of this section, delivered or postmarked with the notification required in paragraph (b)(4) of this section.

(4) *Initial notification requirements for constructed/reconstructed sources.* After the effective date of these standards, whether or not an approved permit program is effective in the State in which a source subject to these standards is (or would be) located, an owner or operator subject to the notification requirements of § 63.5 of subpart A of this part and § 63.566 of this subpart who intends to construct a new source subject to these standards, reconstruct a source subject to these standards, or reconstruct a source such that it becomes subject to these standards, shall comply with paragraphs (b)(4)(i), (ii), (iii), and (iv) of this section.

(i) *Notify the Administrator in writing of the intended construction or reconstruction.* The notification shall be submitted as soon as practicable before the construction or reconstruction is planned to commence. The notification shall include all the information required for an application for approval of construction or reconstruction as specified in § 63.5 of subpart A of this part. The application for approval of construction or reconstruction may be

used to fulfill the requirements of this paragraph.

(ii) Submit a notification of the date when construction or reconstruction was commenced, delivered or postmarked not later than 30 days after such date, if construction was commenced after the effective date.

(iii) Submit a notification of the anticipated date of startup of the source, delivered or postmarked not more than 60 days nor less than 30 days before such date;

(iv) Submit a notification of the actual date of startup of the source, delivered or postmarked within 15 calendar days after that date.

(5) *Additional initial notification requirements.* The owner or operator of sources subject to § 63.562(b)(2), (3), and (4), MACT standards, shall also include in the initial notification report required by paragraph (b)(2) and (3) the 24-month annual average or the annual actual HAP emissions from marine tank vessel loading operations, as appropriate, at all loading berths, as calculated according to the procedures in § 63.565(l). Emissions will be reported by commodity and type of marine tank vessel (barge or tanker) loaded.

(ii) As an alternative to reporting the information in paragraph (b)(5)(i) of this section, the source may submit documentation showing that all HAP-containing marine tank vessel loading operations, not exempt by § 63.560(d), occurred using vapor tight vessels that comply with the procedures of § 63.563(a) and that the emissions were routed to control devices meeting the requirements specified in § 63.563(b).

(c) *Request for extension of compliance.* If the owner or operator has installed BACT or technology to meet LAER consistent with § 63.6(i)(5) of subpart A of this part, he/she may submit to the Administrator (or State with an approved permit program) a request for an extension of compliance as specified in § 63.6(i)(4)(i)(B), (i)(5), and (i)(6) of subpart A of this part.

(d) *Reporting for performance testing of flares.* The owner or operator of a source required to conduct an opacity

performance test shall report the opacity results and other information required by § 63.565(e) and § 63.11 of subpart A of this part with the notification of compliance status.

(e) *Summary reports and excess emissions and monitoring system performance reports*—(1) *Schedule for summary report and excess emissions and monitoring system performance reports.* Excess emissions and parameter monitoring exceedances are defined in § 63.563(b). The owner or operator of a source subject to these emissions standards that is required to install a CMS shall submit an excess emissions and continuous monitoring system performance report and/or a summary report to the Administrator once each year, except, when the source experiences excess emissions, the source shall comply with a semi-annual reporting format until a request to reduce reporting frequency under paragraph (e)(2) of this section is approved.

(2) *Request to reduce frequency of excess emissions and continuous monitoring system performance reports.* An owner or operator who is required to submit excess emissions and continuous monitoring system performance and summary reports on a semi-annual basis may reduce the frequency of reporting to annual if the following conditions are met:

(i) For 1 full year the source's excess emissions and continuous monitoring system performance reports continually demonstrate that the source is in compliance; and

(ii) The owner or operator continues to comply with all recordkeeping and monitoring requirements specified in this subpart and subpart A of this part.

(3) The frequency of reporting of excess emissions and continuous monitoring system performance and summary reports required may be reduced only after the owner or operator notifies the Administrator in writing of his or her intention to make such a change and the Administrator does not object to the intended change. In deciding whether to approve a reduced frequency of reporting, the Administrator may review information concerning the source's entire previous performance history during the 5-year recordkeeping prior to the intended change,

including performance test results, monitoring data, and evaluations of an owner or operator's conformance with operation maintenance requirements. Such information may be used by the Administrator to make a judgement about the source's potential for non-compliance in the future. If the Administrator will notify the owner or operator in writing within 45 days after receiving notice of the owner or operator's intention. The notification from the Administrator to the owner or operator will specify the grounds on which the disapproval is based. In the absence of a notice of disapproval within 45 days, approval is automatically granted.

(4) *Content and submittal dates for excess emissions and monitoring system performance reports.* All excess emissions and monitoring system performance reports and all summary reports, if required per paragraph (e)(5) and (6) of this section, shall be delivered or post-marked within 30 days following the end of each calendar year, or within 30 days following the end of each six month period, if appropriate. Written reports of excess emissions or exceedances of process or control system parameters shall include all information required in § 63.10(c)(5) through (13) of subpart A of this part as applicable in Table 1 of § 63.560 and information from any calibration tests in which the monitoring equipment is not in compliance with PS 8 or other methods used for accuracy testing of temperature, pressure, or flow monitoring devices. The written report shall also include the name, title, and signature of the responsible official who is certifying the accuracy of the report. When no excess emissions or exceedances have occurred or monitoring equipment has not been inoperative, repaired, or adjusted, such information shall be stated in the report. This information will be kept for a minimum of 5 years and made readily available to the Administrator or delegated State authority upon request.

(5) If the total duration of excess emissions or control system parameter exceedances for the reporting period is less than 5 percent of the total operating time for the reporting period, and CMS downtime for the reporting period

is less than 10 percent of the total operating time for the reporting period, only the summary report of § 63.10(e)(3)(vi) of subpart A of this part shall be submitted, and the full excess emissions and continuous monitoring system performance report of paragraph (e)(4) of this section need not be submitted unless required by the Administrator.

(6) If the total duration of excess emissions or process or control system parameter exceedances for the reporting period is 5 percent or greater of the total operating time for the reporting period, or the total CMS downtime for the reporting period is 10 percent or greater of the total operating time for the reporting period, both the summary report of § 63.10(e)(3)(vi) of subpart A of this part and the excess emissions and continuous monitoring system performance report of paragraph (e)(4) of this section shall be submitted.

(f) *Vapor collection system of the terminal.* Each owner or operator of an affected source shall submit with the initial performance test and maintain in an accessible location on site an engineering report describing in detail the vent system, or vapor collection system, used to vent each vent stream to a control device. This report shall include all valves and vent pipes that could vent the stream to the atmosphere, thereby bypassing the control device, and identify which valves are car-sealed opened and which valves are car-sealed closed.

(g) If a vent system, or vapor collection system, containing valves that could divert the emission stream away from the control device is used, each owner or operator of an affected source shall keep for at least 5 years up-to-date, readily accessible continuous records of:

(1) All periods when flow bypassing the control device is indicated if flow indicators are installed under § 63.563(a)(1) and § 63.564(b), and

(2) All times when maintenance is performed on car-sealed valves, when the car-seal is broken, and when the valve position is changed (i.e., from open to closed for valves in the vent piping to the control device and from closed to open for valves that vent the stream directly or indirectly to the at-

mosphere bypassing the control device) if valves are monitored under § 63.564(b).

(h) The owner or operator of an affected source shall keep the vapor-tightness documentation required under § 63.563(a)(4) on file at the source in a permanent form available for inspection.

(i) *Vapor tightness test documentation for marine tank vessels.* The owner or operator of an affected source shall maintain a documentation file for each marine tank vessel loaded at that source to reflect current test results as determined by the appropriate method in § 63.565(c)(1) and (2). Updates to this documentation file shall be made at least once per year. The owner or operator shall include, as a minimum, the following information in this documentation:

- (1) Test title;
- (2) Marine vessel owner and address;
- (3) Marine vessel identification number;
- (4) Loading time, according to § 63.563(a)(4)(ii) or (iii), if appropriate;
- (5) Testing location;
- (6) Date of test;
- (7) Tester name and signature;
- (8) Test results from § 63.565(c)(1) or (2), as appropriate;
- (9) Documentation provided under § 63.563(a)(4)(ii) and (iii)(B) showing that the repair of leaking components attributed to a failure of a vapor-tightness test is technically infeasible without dry-docking the vessel; and
- (10) Documentation that a marine tank vessel failing a pressure test or leak test has been repaired.

(j) *Emission estimation reporting and recordkeeping procedures.* The owner or operator of each source complying with the emission limits specified in § 63.562(b)(2), (3), and (4) shall comply with the following provisions:

- (1) Maintain records of all measurements, calculations, and other documentation used to identify commodities exempted under § 63.560(d);
- (2) Keep readily accessible records of the emission estimation calculations performed in § 63.565(l) for 5 years; and
- (3) Submit an annual report of the source's HAP control efficiency calculated using the procedures specified

in §63.565(l), based on the source's actual throughput.

(4) Owners or operators of marine tank vessel loading operations specified in §63.560(a)(3) shall retain records of the emissions estimates determined in §63.565(l) and records of their actual throughputs by commodity, for 5 years.

(k) *Leak detection and repair of vapor collection systems and control devices.* When each leak of the vapor collection system, or vapor collection system, and control device is detected and repaired as specified in §63.563(c) the following information required shall be maintained for 5 years:

- (1) Date of inspection;
- (2) Findings (location, nature, and severity of each leak);
- (3) Leak determination method;
- (4) Corrective action (date each leak repaired, reasons for repair interval); and
- (5) Inspector name and signature.

#### Subparts Z-BB [Reserved]

#### Subpart CC—National Emission Standards for Hazardous Air Pollutants From Petroleum Refineries

SOURCE: 60 FR 43260, Aug. 18, 1995, unless otherwise noted.

#### §63.640 Applicability and designation of affected source.

(a) This subpart applies to petroleum refining process units and to related emission points that are specified in paragraphs (c)(5) through (c)(7) of this section that are located at a plant site that meet the criteria in paragraphs (a)(1) and (a)(2) of this section;

(1) Are located at a plant site that is a major source as defined in section 112(a) of the Clean Air Act; and

(2) Emit or have equipment containing or contacting one or more of the hazardous air pollutants listed in table 1 of this subpart.

(b) For process units that are designed and operated as flexible operation units, the applicability of this subpart shall be determined for existing sources based on the expected utilization for the 5 years following promulgation of this subpart and for new

sources based on the expected utilization for the first 5 years after startup.

(c) For the purpose of this subpart, the affected source shall comprise all emission points, in combination, listed in paragraphs (c)(1) through (c)(7) of this section that are located at a single refinery plant site.

(1) All miscellaneous process vents from petroleum refining process units meeting the criteria in paragraph (a) of this section;

(2) All storage vessels associated with petroleum refining process units meeting the criteria in paragraph (a) of this section;

(3) All wastewater streams and treatment operations associated with petroleum refining process units meeting the criteria in paragraph (a) of this section;

(4) All equipment leaks from petroleum refining process units meeting the criteria in paragraph (a) of this section;

(5) All gasoline loading racks classified under Standard Industrial Classification code 2911 meeting the criteria in paragraph (a) of this section;

(6) All marine vessel loading operations located at a petroleum refinery meeting the criteria in paragraph (a) of this section and the applicability criteria of subpart Y, §63.560; and

(7) All storage vessels and equipment leaks associated with a bulk gasoline terminal or pipeline breakout station classified under Standard Industrial Classification code 2911 located within a contiguous area and under common control with a refinery meeting the criteria in paragraph (a) of this section.

(d) The affected source subject to this subpart does not include the emission points listed in paragraphs (d)(1) through (d)(5) of this section.

(1) Stormwater from segregated stormwater sewers;

(2) Spills;

(3) Any pump, compressor, pressure relief device, sampling connection system, open-ended valve or line, valve, or instrumentation system that is intended to operate in organic hazardous air pollutant service, as defined in §63.641 of this subpart, for less than 300 hours during the calendar year;

(4) Catalytic cracking unit and catalytic reformer catalyst regeneration vents, and sulfur plant vents; and

(5) Emission points routed to a fuel gas system, as defined in § 63.641 of this subpart. No testing, monitoring, recordkeeping, or reporting is required for refinery fuel gas systems or emission points routed to refinery fuel gas systems.

(e) The owner or operator shall follow the procedures specified in paragraphs (e)(1) and (e)(2) of this section to determine whether a storage vessel is part of a source to which this subpart applies.

(1) Where a storage vessel is used exclusively by a process unit, the storage vessel shall be considered part of that process unit.

(i) If the process unit is a petroleum refining process unit subject to this subpart, then the storage vessel is part of the affected source to which this subpart applies.

(ii) If the process unit is not subject to this subpart, then the storage vessel is not part of the affected source to which this subpart applies.

(2) If a storage vessel is not dedicated to a single process unit, then the applicability of this subpart shall be determined according to the provisions in paragraphs (e)(2)(i) through (e)(2)(iii) of this section.

(i) If a storage vessel is shared among process units and one of the process units has the predominant use, as determined by paragraphs (e)(2)(i)(A) and (e)(2)(i)(B) of this section, then the storage vessel is part of that process unit.

(A) If the greatest input on a volume basis into the storage vessel is from a process unit that is located on the same plant site, then that process unit has the predominant use.

(B) If the greatest input on a volume basis into the storage vessel is provided from a process unit that is not located on the same plant site, then the predominant use shall be the process unit that receives the greatest amount of material on a volume basis from the storage vessel at the same plant site.

(ii) If a storage vessel is shared among process units so that there is no single predominant use, and at least one of those process units is a petro-

leum refining process unit subject to this subpart, the storage vessel shall be considered to be part of the petroleum refining process unit that is subject to this subpart. If more than one petroleum refining process unit is subject to this subpart, the owner or operator may assign the storage vessel to any of the petroleum refining process units subject to this subpart.

(iii) If the predominant use of a storage vessel varies from year to year, then the applicability of this subpart shall be determined based on the utilization of that storage vessel during the year preceding promulgation of this subpart. This determination shall be reported as specified in § 63.654(h)(6)(ii) of this subpart.

(f) The owner or operator shall follow the procedures specified in paragraphs (f)(1) through (f)(5) of this section to determine whether a miscellaneous process vent from a distillation unit is part of a source to which this subpart applies.

(1) If the greatest input to the distillation unit is from a process unit located on the same plant site, then the distillation unit shall be assigned to that process unit.

(2) If the greatest input to the distillation unit is provided from a process unit that is not located on the same plant site, then the distillation unit shall be assigned to the process unit located at the same plant site that receives the greatest amount of material from the distillation unit.

(3) If a distillation unit is shared among process units so that there is no single predominant use, as described in paragraphs (f)(1) and (f)(2) of this section, and at least one of those process units is a petroleum refining process unit subject to this subpart, the distillation unit shall be assigned to the petroleum refining process unit that is subject to this subpart. If more than one petroleum refining process unit is subject to this subpart, the owner or operator may assign the distillation unit to any of the petroleum refining process units subject to this rule.

(4) If the process unit to which the distillation unit is assigned is a petroleum refining process unit subject to this subpart and the vent stream contains greater than 20 parts per million

by volume total organic hazardous air pollutants, then the vent from the distillation unit is considered a miscellaneous process vent (as defined in § 63.641 of this subpart) and is part of the source to which this subpart applies.

(5) If the predominant use of a distillation unit varies from year to year, then the applicability of this subpart shall be determined based on the utilization of that distillation unit during the year preceding promulgation of this subpart. This determination shall be reported as specified in § 63.654(h)(6)(iii).

(g) The provisions of this subpart do not apply to the processes specified in paragraphs (g)(1) through (g)(7) of this section.

(1) Research and development facilities, regardless of whether the facilities are located at the same plant site as a petroleum refining process unit that is subject to the provisions of this subpart;

(2) Equipment that does not contain any of the hazardous air pollutants listed in table 1 of this subpart that is located within a petroleum refining process unit that is subject to this subpart;

(3) Units processing natural gas liquids;

(4) Units that are used specifically for recycling discarded oil;

(5) Shale oil extraction units;

(6) Ethylene processes; and

(7) Process units and emission points subject to subparts F, G, H, and I of this part.

(h) Except as provided in paragraphs (k), (l), or (m) of this section, sources subject to this subpart are required to achieve compliance on or before the dates specified in paragraphs (h)(1) through (h)(4) of this section.

(1) New sources that commence construction or reconstruction after July 14, 1994 shall be in compliance with this subpart upon initial startup or the date of promulgation of this subpart, whichever is later, as provided in § 63.6(b) of subpart A of this part.

(2) Except as provided in paragraphs (h)(3) through (h)(5) of this section, existing sources shall be in compliance with this subpart no later than August 18, 1998, except as provided in § 63.6(c) of

subpart A of this part, or unless an extension has been granted by the Administrator as provided in § 63.6(i) of subpart A of this part.

(3) Marine tank vessels at existing sources shall be in compliance with this subpart no later than August 18, 1999 unless the vessels are included in an emissions average to generate emission credits. Marine tank vessels used to generate credits in an emissions average shall be in compliance with this subpart no later than August 18, 1998 unless an extension has been granted by the Administrator as provided in § 63.6(i).

(4) Existing Group 1 floating roof storage vessels shall be in compliance with § 63.646 at the first degassing and cleaning activity after August 18, 1998, or within 10 years after promulgation of the rule, whichever is first.

(5) An owner or operator may elect to comply with the provisions of § 63.648 (c) through (i) as an alternative to the provisions of § 63.648 (a) and (b). In such cases, the owner or operator shall comply no later than the dates specified in paragraphs (h)(5)(i) through (h)(5)(iii) of this section.

(i) Phase I (see table 2 of this subpart), beginning on August 18, 1998;

(ii) Phase II (see table 2 of this subpart), beginning no later than August 18, 1999; and

(iii) Phase III (see table 2 of this subpart), beginning no later than February 18, 2001.

(i) If an additional petroleum refining process unit is added to a plant site that is a major source as defined in section 112(a) of the Clean Air Act, the addition shall be subject to the requirements for a new source if it meets the criteria specified in paragraphs (i)(1) through (i)(3) of this section:

(1) It is an addition that meets the definition of construction in § 63.2 of subpart A of this part;

(2) Such construction commenced after July 14, 1994; and

(3) The addition has the potential to emit 10 tons per year or more of any hazardous air pollutant or 25 tons per year or more of any combination of hazardous air pollutants.

(j) If any change is made to a petroleum refining process unit subject to

this subpart, the change shall be subject to the requirements for a new source if it meets the criteria specified in paragraphs (j)(1) and (j)(2) of this section:

(1) It is a change that meets the definition of reconstruction in § 63.2 of subpart A of this part; and

(2) Such reconstruction commenced after July 14, 1994.

(k) If an additional petroleum refining process unit is added to a plant site or a change is made to a petroleum refining process unit and the addition or change is determined to be subject to the new source requirements according to paragraphs (i) or (j) of this section it must comply with the requirements specified in paragraphs (k)(1) and (k)(2) of this section:

(1) The reconstructed source, addition, or change shall be in compliance with the new source requirements upon initial startup of the reconstructed source or by the date of promulgation of this subpart, whichever is later; and

(2) The owner or operator of the reconstructed source, addition, or change shall comply with the reporting and recordkeeping requirements that are applicable to new sources. The applicable reports include, but are not limited to:

(i) The application for approval of construction or reconstruction shall be submitted as soon as practical before the construction or reconstruction is planned to commence (but it need not be sooner than 90 days after the date of promulgation of this subpart);

(ii) The Notification of Compliance Status report as required by § 63.654(f) for a new source, addition, or change;

(iii) Periodic Reports and Other Reports as required by § 63.654 (g) and (h);

(iv) Reports and notifications required by § 60.487 of subpart VV of part 60 or § 63.182 of subpart H of this part. The requirements for subpart H are summarized in table 3 of this subpart;

(v) Reports required by 40 CFR 61.357 of subpart FF;

(vi) Reports and notifications required by § 63.428 (b), (c), (g)(1), and (h)(1) through (h)(3) of subpart R. These requirements are summarized in table 4 of this subpart; and

(vii) Reports and notifications required by §§ 63.566 and 63.567 of subpart

Y of this part. These requirements are summarized in table 5 of this subpart.

(l) If an additional petroleum refining process unit is added to a plant site or if a miscellaneous process vent, storage vessel, gasoline loading rack, or marine tank vessel loading operation that meets the criteria in paragraphs (c)(1) through (c)(7) of this section is added to an existing petroleum refinery or if another deliberate operational process change creating an additional Group 1 emission point(s) (as defined in § 63.641) is made to an existing petroleum refining process unit, and if the addition or process change is not subject to the new source requirements as determined according to paragraphs (i) or (j) of this section, the requirements in paragraphs (l)(1) through (l)(3) of this section shall apply. Examples of process changes include, but are not limited to, changes in production capacity, or feed or raw material where the change requires construction or physical alteration of the existing equipment or catalyst type, or whenever there is replacement, removal, or addition of recovery equipment. For purposes of this paragraph and paragraph (m) of this section, process changes do not include: Process upsets, unintentional temporary process changes, and changes that are within the equipment configuration and operating conditions documented in the Notification of Compliance Status report required by § 63.654(f).

(1) The added emission point(s) and any emission point(s) within the added or changed petroleum refining process unit are subject to the requirements for an existing source.

(2) The added emission point(s) and any emission point(s) within the added or changed petroleum refining process unit shall be in compliance with this subpart by the dates specified in paragraphs (l)(2)(i) or (l)(2)(ii) of this section, as applicable.

(i) If a petroleum refining process unit is added to a plant site or an emission point(s) is added to any existing petroleum refining process unit, the added emission point(s) shall be in compliance upon initial startup of any added petroleum refining process unit or emission point(s) or by 3 years after

the date of promulgation of this subpart, whichever is later.

(ii) If a deliberate operational process change to an existing petroleum refining process unit causes a Group 2 emission point to become a Group 1 emission point (as defined in §63.641), the owner or operator shall be in compliance upon initial startup or by 3 years after the date of promulgation of this subpart, whichever is later, unless the owner or operator demonstrates to the Administrator that achieving compliance will take longer than making the change. If this demonstration is made to the Administrator's satisfaction, the owner or operator shall follow the procedures in paragraphs (m)(1) through (m)(3) of this section to establish a compliance date.

(3) The owner or operator of a petroleum refining process unit or of a storage vessel, miscellaneous process vent, wastewater stream, gasoline loading rack, or marine tank vessel loading operation meeting the criteria in paragraphs (c)(1) through (c)(7) of this section that is added to a plant site and is subject to the requirements for existing sources shall comply with the reporting and recordkeeping requirements that are applicable to existing sources including, but not limited to, the reports listed in paragraphs (l)(3)(i) through (l)(3)(vii) of this section. A process change to an existing petroleum refining process unit shall be subject to the reporting requirements for existing sources including, but not limited to, the reports listed in paragraphs (l)(3)(i) through (l)(3)(vii) of this section. The applicable reports include, but are not limited to:

(i) The Notification of Compliance Status report as required by §63.654(f) for the emission points that were added or changed;

(ii) Periodic Reports and other reports as required by §63.654 (g) and (h);

(iii) Reports and notifications required by sections of subpart A of this part that are applicable to this subpart, as identified in table 6 of this subpart.

(iv) Reports and notifications required by §63.182, or 40 CFR 60.487. The requirements of subpart H of this part are summarized in table 3 of this subpart;

(v) Reports required by §61.357 of subpart FF;

(vi) Reports and notifications required by §63.428 (b), (c), (g)(1), and (h)(1) through (h)(3) of subpart R of this part. These requirements are summarized in table 4 of this subpart; and

(vii) Reports and notifications required by §63.567 of subpart Y of this part. These requirements are summarized in table 5 of this subpart.

(4) If pumps, compressors, pressure relief devices, sampling connection systems, open-ended valves or lines, valves, or instrumentation systems are added to an existing source, they are subject to the equipment leak standards for existing sources in §63.648. A notification of compliance status report shall not be required for such added equipment.

(m) If a change that does not meet the criteria in paragraph (l) of this section is made to a petroleum refining process unit subject to this subpart, and the change causes a Group 2 emission point to become a Group 1 emission point (as defined in §63.641), then the owner or operator shall comply with the requirements of this subpart for existing sources for the Group 1 emission point as expeditiously as practicable, but in no event later than 3 years after the emission point becomes Group 1.

(1) The owner or operator shall submit to the Administrator for approval a compliance schedule, along with a justification for the schedule.

(2) The compliance schedule shall be submitted within 180 days after the change is made, unless the compliance schedule has been previously submitted to the permitting authority. If it is not possible to determine until after the change is implemented whether the emission point has become Group 1, the compliance schedule shall be submitted within 180 days of the date when the affect of the change is known to the source. The compliance schedule may be submitted in the next Periodic Report if the change is made after the date the Notification of Compliance Status report is due.

(3) The Administrator shall approve or deny the compliance schedule or request changes within 120 calendar days of receipt of the compliance schedule

and justification. Approval is automatic if not received from the Administrator within 120 calendar days of receipt.

(n) Overlap of subpart CC with other regulations for storage vessels.

(1) After the compliance dates specified in paragraph (h) of this section, a Group 1 or Group 2 storage vessel that is part of an existing source and is also subject to the provisions of 40 CFR part 60 subpart Kb is required to comply only with the requirements of 40 CFR part 60 subpart Kb.

(2) After the compliance dates specified in paragraph (h) of this section a Group 1 storage vessel that is part of a new source and is subject to 40 CFR part 60, subpart Kb is required to comply only with this subpart.

(3) After the compliance dates specified in paragraph (h) of this section, a Group 2 storage vessel that is part of a new source and is subject to the control requirements in §60.112b of 40 CFR part 60, subpart Kb is required to comply only with 40 CFR part 60, subpart Kb.

(4) After the compliance dates specified in paragraph (h) of this section, a Group 2 storage vessel that is part of a new source and is subject to 40 CFR 60.110b, but is not required to apply controls by 40 CFR 60.110b or 60.112b is required to comply only with this subpart.

(5) After the compliance dates specified in paragraph (h) of this section a Group 1 storage vessel that is also subject to the provisions of 40 CFR part 60, subparts K or Ka is required to only comply with the provisions of this subpart.

(6) After compliance dates specified in paragraph (h) of this section, a Group 2 storage vessel that is subject to the control requirements of 40 CFR part 60, subparts K or Ka is required to only comply with the provisions of 40 CFR part 60, subparts K or Ka.

(7) After the compliance dates specified in paragraph (h) of this section, a Group 2 storage vessel that is subject to 40 CFR part 60, subparts K or Ka, but not to the control requirements of 40 CFR part 60, subparts K or Ka, is required to comply only with this subpart.

(o) Overlap of this subpart CC with other regulations for wastewater.

(1) After the compliance dates specified in paragraph (h) of this section a Group 1 wastewater stream managed in a piece of equipment that is also subject to the provisions of 40 CFR part 60, subpart QQQ is required to comply only with this subpart.

(2) After the compliance dates specified in paragraph (h) of this section a Group 1 or Group 2 wastewater stream that is conveyed, stored, or treated in a wastewater stream management unit that also receives streams subject to the provisions of §§63.133 through 63.147 of subpart G wastewater provisions of this part shall comply as specified in paragraphs (o)(2)(i) through (o)(2)(iii) of this section. Compliance with the provisions of paragraph (o)(2) of this section shall constitute compliance with the requirements of this subpart for that wastewater stream.

(i) The provisions in §§63.133 through 63.137 and §63.140 of subpart G for all equipment used in the storage and conveyance of the Group 1 or Group 2 wastewater stream.

(ii) The provisions in both 40 CFR part 61, subpart FF and in §§63.138 and 63.139 of subpart G for the treatment and control of the Group 1 or Group 2 wastewater stream.

(iii) The provisions in §§63.143 through 63.148 of subpart G for monitoring and inspections of equipment and for recordkeeping and reporting requirements. The owner or operator is not required to comply with the monitoring, recordkeeping, and reporting requirements associated with the treatment and control requirements in 40 CFR part 61, subpart FF, §§61.355 through 61.357.

(p) Overlap of subpart CC with other regulations for equipment leaks. After the compliance dates specified in paragraph (h) of this section equipment leaks that are also subject to the provisions of 40 CFR parts 60 and 61 are required to comply only with the provisions specified in this subpart.

(q) For overlap of subpart CC with local or State regulations, the permitting authority for the affected source may allow consolidation of the monitoring, recordkeeping, and reporting requirements under this subpart with

the monitoring, recordkeeping, and reporting requirements under other applicable requirements in 40 CFR parts 60, 61, or 63, and in any 40 CFR part 52 approved State implementation plan provided the implementation plan allows for approval of alternative monitoring, reporting, or recordkeeping requirements and provided that the permit contains an equivalent degree of compliance and control.

[60 FR 43260, Aug. 18, 1995; 61 FR 7051, Feb. 23, 1996, as amended at 61 FR 29878, June 12, 1996]

#### § 63.641 Definitions.

All terms used in this subpart shall have the meaning given them in the Clean Air Act, subpart A of this part, and in this section. If the same term is defined in subpart A and in this section, it shall have the meaning given in this section for purposes of this subpart.

*Affected source* means the collection of emission points to which this subpart applies as determined by the criteria in § 63.640.

*Aliphatic* means open-chained structure consisting of paraffin, olefin and acetylene hydrocarbons and derivatives.

*Boiler* means any enclosed combustion device that extracts useful energy in the form of steam and is not an incinerator.

*By compound* means by individual stream components, not by carbon equivalents.

*Car-seal* means a seal that is placed on a device that is used to change the position of a valve (e.g., from opened to closed) in such a way that the position of the valve cannot be changed without breaking the seal.

*Closed vent system* means a system that is not open to the atmosphere and is configured of piping, ductwork, connections, and, if necessary, flow inducing devices that transport gas or vapor from an emission point to a control device or back into the process. If gas or vapor from regulated equipment is routed to a process (e.g., to a petroleum refinery fuel gas system), the process shall not be considered a closed vent system and is not subject to closed vent system standards.

*Combustion device* means an individual unit of equipment such as a flare,

incinerator, process heater, or boiler used for the combustion of organic hazardous air pollutant vapors.

*Connector* means flanged, screwed, or other joined fittings used to connect two pipe lines or a pipe line and a piece of equipment. A common connector is a flange. Joined fittings welded completely around the circumference of the interface are not considered connectors for the purpose of this regulation. For the purpose of reporting and recordkeeping, connector means joined fittings that are accessible.

*Continuous record* means documentation, either in hard copy or computer readable form, of data values measured at least once every hour and recorded at the frequency specified in § 63.654(i).

*Continuous recorder* means a data recording device recording an instantaneous data value or an average data value at least once every hour.

*Control device* means any equipment used for recovering, removing, or oxidizing organic hazardous air pollutants. Such equipment includes, but is not limited to, absorbers, carbon adsorbers, condensers, incinerators, flares, boilers, and process heaters. For miscellaneous process vents (as defined in this section), recovery devices (as defined in this section) are not considered control devices.

*Delayed coker vent* means a vent that is typically intermittent in nature, and usually occurs only during the initiation of the depressuring cycle of the decoking operation when vapor from the coke drums cannot be sent to the fractionator column for product recovery, but instead is routed to the atmosphere through a closed blowdown system or directly to the atmosphere in an open blowdown system. The emissions from the decoking phases of delayed coker operations, which include coke drum deheading, draining, or decoking (coke cutting), are not considered to be delayed coker vents.

*Distillate receiver* means overhead receivers, overhead accumulators, reflux drums, and condenser(s) including ejector-condenser(s) associated with a distillation unit.

*Distillation unit* means a device or vessel in which one or more feed streams are separated into two or more exit streams, each exit stream having

component concentrations different from those in the feed stream(s). The separation is achieved by the redistribution of the components between the liquid and the vapor phases by vaporization and condensation as they approach equilibrium within the distillation unit. Distillation unit includes the distillate receiver, reboiler, and any associated vacuum pump or steam jet.

*Emission point* means an individual miscellaneous process vent, storage vessel, wastewater stream, or equipment leak associated with a petroleum refining process unit; an individual storage vessel or equipment leak associated with a bulk gasoline terminal or pipeline breakout station classified under Standard Industrial Classification code 2911; a gasoline loading rack classified under Standard Industrial Classification code 2911; or a marine tank vessel loading operation located at a petroleum refinery.

*Equipment leak* means emissions of organic hazardous air pollutants from a pump, compressor, pressure relief device, sampling connection system, open-ended valve or line, valve, or instrumentation system "in organic hazardous air pollutant service" as defined in this section. Vents from wastewater collection and conveyance systems (including, but not limited to wastewater drains, sewer vents, and sump drains), tank mixers, and sample valves on storage tanks are not equipment leaks.

*Flame zone* means the portion of a combustion chamber of a boiler or process heater occupied by the flame envelope created by the primary fuel.

*Flexible operation unit* means a process unit that manufactures different products periodically by alternating raw materials or operating conditions. These units are also referred to as campaign plants or blocked operations.

*Flow indicator* means a device that indicates whether gas is flowing, or whether the valve position would allow gas to flow, in a line.

*Fuel gas system* means the offsite and onsite piping and control system that gathers gaseous streams generated by refinery operations, may blend them with sources of gas, if available, and transports the blended gaseous fuel at suitable pressures for use as fuel in

heaters, furnaces, boilers, incinerators, gas turbines, and other combustion devices located within or outside of the refinery. The fuel is piped directly to each individual combustion device, and the system typically operates at pressures over atmospheric. The gaseous streams can contain a mixture of methane, light hydrocarbons, hydrogen and other miscellaneous species.

*Gasoline loading rack* means the loading arms, pumps, meters, shutoff valves, relief valves, and other piping and valves necessary to fill gasoline cargo tanks.

*Group 1 gasoline loading rack* means any gasoline loading rack classified under Standard Industrial Classification code 2911 that is located within a bulk gasoline terminal that has a gasoline throughput greater than 75,700 liters per day. Gasoline throughput shall be the maximum calculated design throughput for the terminal as may be limited by compliance with enforceable conditions under Federal, State, or local law and discovered by the Administrator and any other person.

*Group 1 marine tank vessel* means a vessel at an existing source loaded at any land- or sea-based terminal or structure that loads liquid commodities with vapor pressures greater than or equal to 10.3 kilopascals in bulk onto marine tank vessels, that emits greater than 9.1 megagrams of any individual HAP or 22.7 megagrams of any combination of HAP annually after August 18, 1999, or a vessel at a new source loaded at any land- or sea-based terminal or structure that loads liquid commodities with vapor pressures greater than or equal to 10.3 kilopascals onto marine tank vessels.

*Group 1 miscellaneous process vent* means a miscellaneous process vent for which the total organic HAP concentration is greater than or equal to 20 parts per million by volume, and the total volatile organic compound emissions are greater than or equal to 33 kilograms per day for existing sources and 6.8 kilograms per day for new sources at the outlet of the final recovery device (if any) and prior to any control device and prior to discharge to the atmosphere.

*Group 1 storage vessel* means a storage vessel at an existing source that has a

design storage capacity greater than or equal to 177 cubic meters and stored-liquid maximum true vapor pressure greater than or equal to 10.4 kilopascals and HAP liquid concentration greater than 4 percent by weight total organic HAP; a storage vessel at a new source that has a design storage capacity greater than or equal to 151 cubic meters and stored-liquid maximum true vapor pressure greater than or equal to 3.4 kilopascals and HAP liquid concentration greater than 2 percent by weight total organic HAP; or a storage vessel at a new source that has a design storage capacity greater than or equal to 76 cubic meters and less than 151 cubic meters and stored-liquid maximum true vapor pressure greater than or equal to 77 kilopascals and HAP liquid concentration greater than 2 percent by weight total organic HAP.

*Group 1 wastewater stream* means a wastewater stream at a petroleum refinery with a total annual benzene loading of 10 megagrams per year or greater as calculated according to the procedures in 40 CFR 61.342 of subpart FF of part 61 that has a flow rate of 0.02 liters per minute or greater, a benzene concentration of 10 parts per million by weight or greater, and is not exempt from control requirements under the provisions of 40 CFR part 61, subpart FF.

*Group 2 gasoline loading rack* means a gasoline loading rack classified under Standard Industrial Classification code 2911 that does not meet the definition of a Group 1 gasoline loading rack.

*Group 2 marine tank vessel* means a marine tank vessel that does not meet the definition of a Group 1 marine tank vessel.

*Group 2 miscellaneous process vent* means a miscellaneous process vent that does not meet the definition of a Group 1 miscellaneous process vent.

*Group 2 storage vessel* means a storage vessel that does not meet the definition of a Group 1 storage vessel.

*Group 2 wastewater stream* means a wastewater stream that does not meet the definition of Group 1 wastewater stream.

*Hazardous air pollutant* or *HAP* means one of the chemicals listed in section 112(b) of the Clean Air Act.

*Incinerator* means an enclosed combustion device that is used for destroying organic compounds. Auxiliary fuel may be used to heat waste gas to combustion temperatures. Any energy recovery section present is not physically formed into one manufactured or assembled unit with the combustion section; rather, the energy recovery section is a separate section following the combustion section and the two are joined by ducts or connections carrying flue gas.

*In heavy liquid service* means that the piece of equipment is not in gas/vapor service or in light liquid service.

*In light liquid service* means that the piece of equipment contains a liquid that meets the conditions specified in § 60.593(d) of part 60, subpart GGG.

*In organic hazardous air pollutant service* means that a piece of equipment either contains or contacts a fluid (liquid or gas) that is at least 5 percent by weight of total organic HAP's as determined according to the provisions of § 63.180(d) of subpart H of this part and table 1 of this subpart. The provisions of § 63.180(d) of subpart H also specify how to determine that a piece of equipment is not in organic HAP service.

*Leakless valve* means a valve that has no external actuating mechanism.

*Maximum true vapor pressure* means the equilibrium partial pressure exerted by the stored liquid at the temperature equal to the highest calendar-month average of the liquid storage temperature for liquids stored above or below the ambient temperature or at the local maximum monthly average temperature as reported by the National Weather Service for liquids stored at the ambient temperature, as determined:

- (1) In accordance with methods specified in § 63.111 of subpart G of this part;
- (2) From standard reference texts; or
- (3) By any other method approved by the Administrator.

*Miscellaneous process vent* means a gas stream containing greater than 20 parts per million by volume organic HAP that is continuously or periodically discharged during normal operation of a petroleum refining process unit meeting the criteria specified in § 63.640(a). Miscellaneous process vents

include gas streams that are discharged directly to the atmosphere, gas streams that are routed to a control device prior to discharge to the atmosphere, or gas streams that are diverted through a product recovery device prior to control or discharge to the atmosphere. Miscellaneous process vents include vent streams from: caustic wash accumulators, distillation tower condensers/accumulators, flash/knockout drums, reactor vessels, scrubber overheads, stripper overheads, vacuum (steam) ejectors, wash tower overheads, water wash accumulators, blowdown condensers/accumulators, and delayed coker vents. Miscellaneous process vents do not include:

- (1) Gaseous streams routed to a fuel gas system;
- (2) Relief valve discharges;
- (3) Leaks from equipment regulated under § 63.648;
- (4) Episodic or nonroutine releases such as those associated with startup, shutdown, malfunction, maintenance, depressuring, and catalyst transfer operations;
- (5) In situ sampling systems (onstream analyzers);
- (6) Catalytic cracking unit catalyst regeneration vents;
- (7) Catalytic reformer regeneration vents;
- (8) Sulfur plant vents;
- (9) Vents from control devices such as scrubbers, boilers, incinerators, and electrostatic precipitators applied to catalytic cracking unit catalyst regeneration vents, catalytic reformer regeneration vents, and sulfur plant vents;
- (10) Vents from any stripping operations applied to comply with the wastewater provisions of this subpart, subpart G of this part, or 40 CFR part 61, subpart FF;
- (11) Coking unit vents associated with coke drum depressuring at or below a coke drum outlet pressure of 15 pounds per square inch gauge, deheading, draining, or decoking (coke cutting) or pressure testing after decoking; and
- (12) Vents from storage vessels.
- (13) Emissions from wastewater collection and conveyance systems including, but not limited to, wastewater drains, sewer vents, and sump drains.

*Operating permit* means a permit required by 40 CFR parts 70 or 71.

*Organic hazardous air pollutant or organic HAP* in this subpart, means any of the organic chemicals listed in table 1 of this subpart.

*Petroleum-based solvents* means mixtures of aliphatic hydrocarbons or mixtures of one and two ring aromatic hydrocarbons.

*Periodically discharged* means discharges that are intermittent and associated with routine operations. Discharges associated with maintenance activities or process upsets are not considered periodically discharged miscellaneous process vents and are therefore not regulated by the petroleum refinery miscellaneous process vent provisions.

*Petroleum refining process unit* means a process unit used in an establishment primarily engaged in petroleum refining as defined in the Standard Industrial Classification code for petroleum refining (2911), and used primarily for the following:

- (1) Producing transportation fuels (such as gasoline, diesel fuels, and jet fuels), heating fuels (such as kerosene, fuel gas distillate, and fuel oils), or lubricants;
- (2) Separating petroleum; or
- (3) Separating, cracking, reacting, or reforming intermediate petroleum streams.
- (4) Examples of such units include, but are not limited to, petroleum-based solvent units, alkylation units, catalytic hydrotreating, catalytic hydrorefining, catalytic hydrocracking, catalytic reforming, catalytic cracking, crude distillation, lube oil processing, hydrogen production, isomerization, polymerization, thermal processes, and blending, sweetening, and treating processes. Petroleum refining process units also include sulfur plants.

*Plant site* means all contiguous or adjoining property that is under common control including properties that are separated only by a road or other public right-of-way. Common control includes properties that are owned, leased, or operated by the same entity, parent entity, subsidiary, or any combination thereof.

*Primary fuel* means the fuel that provides the principal heat input (i.e., more than 50 percent) to the device. To be considered primary, the fuel must be able to sustain operation without the addition of other fuels.

*Process heater* means an enclosed combustion device that primarily transfers heat liberated by burning fuel directly to process streams or to heat transfer liquids other than water.

*Process unit* means the equipment assembled and connected by pipes or ducts to process raw and/or intermediate materials and to manufacture an intended product. A process unit includes any associated storage vessels. For the purpose of this subpart, process unit includes, but is not limited to, chemical manufacturing process units and petroleum refining process units.

*Process unit shutdown* means a work practice or operational procedure that stops production from a process unit or part of a process unit during which it is technically feasible to clear process material from a process unit or part of a process unit consistent with safety constraints and during which repairs can be accomplished. An unscheduled work practice or operational procedure that stops production from a process unit or part of a process unit for less than 24 hours is not considered a process unit shutdown. An unscheduled work practice or operational procedure that would stop production from a process unit or part of a process unit for a shorter period of time than would be required to clear the process unit or part of the process unit of materials and start up the unit, or would result in greater emissions than delay of repair of leaking components until the next scheduled process unit shutdown is not considered a process unit shutdown. The use of spare equipment and technically feasible bypassing of equipment without stopping production are not considered process unit shutdowns.

*Recovery device* means an individual unit of equipment capable of and used for the purpose of recovering chemicals for use, reuse, or sale. Recovery devices include, but are not limited to, absorbers, carbon adsorbers, and condensers.

*Reference control technology for gasoline loading racks* means a vapor collection and processing system used to re-

duce emissions due to the loading of gasoline cargo tanks to 10 milligrams of total organic compounds per liter of gasoline loaded or less.

*Reference control technology for marine vessels* means a vapor collection system and a control device that reduces captured HAP emissions by 97 percent.

*Reference control technology for miscellaneous process vents* means a combustion device used to reduce organic HAP emissions by 98 percent, or to an outlet concentration of 20 parts per million by volume.

*Reference control technology for storage vessels* means either:

(1) An internal floating roof meeting the specifications of §63.119(b) of subpart G except for §63.119 (b)(5) and (b)(6);

(2) An external floating roof meeting the specifications of §63.119(c) of subpart G except for §63.119(c)(2);

(3) An external floating roof converted to an internal floating roof meeting the specifications of §63.119(d) of subpart G except for §63.119(d)(2); or

(4) A closed-vent system to a control device that reduces organic HAP emissions by 95-percent, or to an outlet concentration of 20 parts per million by volume.

(5) For purposes of emissions averaging, these four technologies are considered equivalent.

*Reference control technology for wastewater* means the use of:

(1) Controls specified in §§61.343 through 61.347 of subpart FF of part 61;

(2) A treatment process that achieves the emission reductions specified in table 7 of this subpart for each individual HAP present in the wastewater stream or is a steam stripper that meets the specifications in §63.138(g) of subpart G of this part; and

(3) A control device to reduce by 95 percent (or to an outlet concentration of 20 parts per million by volume for combustion devices) the organic HAP emissions in the vapor streams vented from treatment processes (including the steam stripper described in paragraph (2) of this definition) managing wastewater.

*Refinery fuel gas* means a gaseous mixture of methane, light hydrocarbons, hydrogen, and other miscellaneous species (nitrogen, carbon dioxide, hydrogen sulfide, etc.) that is produced in the refining of crude oil and/or petrochemical processes and that is separated for use as a fuel in boilers and process heaters throughout the refinery.

*Relief valve* means a valve used only to release an unplanned, nonroutine discharge. A relief valve discharge can result from an operator error, a malfunction such as a power failure or equipment failure, or other unexpected cause that requires immediate venting of gas from process equipment in order to avoid safety hazards or equipment damage.

*Research and development facility* means laboratory and pilot plant operations whose primary purpose is to conduct research and development into new processes and products, where the operations are under the close supervision of technically trained personnel, and is not engaged in the manufacture of products for commercial sale, except in a de minimis manner.

*Shutdown* means the cessation of a petroleum refining process unit or a unit operation (including, but not limited to, a distillation unit or reactor) within a petroleum refining process unit for purposes including, but not limited to, periodic maintenance, replacement of equipment, or repair.

*Startup* means the setting into operation of a petroleum refining process unit for purposes of production. Startup does not include operation solely for purposes of testing equipment. Startup does not include changes in product for flexible operation units.

*Storage vessel* means a tank or other vessel that is used to store organic liquids. Storage vessel does not include:

- (1) Vessels permanently attached to motor vehicles such as trucks, railcars, barges, or ships;
- (2) Pressure vessels designed to operate in excess of 204.9 kilopascals and without emissions to the atmosphere;
- (3) Vessels with capacities smaller than 40 cubic meters;
- (4) Bottoms receiver tanks; or

(5) Wastewater storage tanks. Wastewater storage tanks are covered under the wastewater provisions.

*Temperature monitoring device* means a unit of equipment used to monitor temperature and having an accuracy of  $\pm 1$  percent of the temperature being monitored expressed in degrees Celsius or  $\pm 0.5$  °C, whichever is greater.

*Total annual benzene* means the total amount of benzene in waste streams at a facility on an annual basis as determined in § 61.342 of 40 CFR part 61, subpart FF.

*Total organic compounds* or *TOC*, as used in this subpart, means those compounds excluding methane and ethane measured according to the procedures of Method 18 of 40 CFR part 60, appendix A. Method 25A may be used alone or in combination with Method 18 to measure TOC as provided in § 63.645 of this subpart.

*Wastewater* means water or wastewater that, during production or processing, comes into direct contact with or results from the production or use of any raw material, intermediate product, finished product, byproduct, or waste product and is discharged into any individual drain system. Examples are feed tank drawdown; water formed during a chemical reaction or used as a reactant; water used to wash impurities from organic products or reactants; water used to cool or quench organic vapor streams through direct contact; and condensed steam from jet ejector systems pulling vacuum on vessels containing organics.

[60 FR 43260, Aug. 18, 1995, as amended at 61 FR 29879, June 12, 1996]

#### § 63.642 General standards.

(a) Each owner or operator of a source subject to this subpart is required to apply for a part 70 or part 71 operating permit from the appropriate permitting authority. If the EPA has approved a State operating permit program under part 70, the permit shall be obtained from the State authority. If the State operating permit program has not been approved, the source shall apply to the EPA Regional Office pursuant to part 71.

(b) [Reserved]

(c) Table 6 of this subpart specifies the provisions of subpart A of this part

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that apply and those that do not apply to owners and operators of sources subject to this subpart.

(d) Initial performance tests and initial compliance determinations shall be required only as specified in this subpart.

(1) Performance tests and compliance determinations shall be conducted according to the schedule and procedures specified in this subpart.

(2) The owner or operator shall notify the Administrator of the intention to conduct a performance test at least 30 days before the performance test is scheduled.

(3) Performance tests shall be conducted according to the provisions of §63.7(e) except that performance tests shall be conducted at maximum representative operating capacity for the process. During the performance test, an owner or operator shall operate the control device at either maximum or minimum representative operating conditions for monitored control device parameters, whichever results in lower emission reduction.

(4) Data shall be reduced in accordance with the EPA-approved methods specified in the applicable section or, if other test methods are used, the data and methods shall be validated according to the protocol in Method 301 of appendix A of this part.

(e) Each owner or operator of a source subject to this subpart shall keep copies of all applicable reports and records required by this subpart for at least 5 years except as otherwise specified in this subpart. All applicable records shall be maintained in such a manner that they can be readily accessed within 24 hours. Records may be maintained in hard copy or computer-readable form including, but not limited to, on paper, microfilm, computer, floppy disk, magnetic tape, or microfiche.

(f) All reports required under this subpart shall be sent to the Administrator at the addresses listed in §63.13 of subpart A of this part. If acceptable to both the Administrator and the owner or operator of a source, reports may be submitted on electronic media.

(g) The owner or operator of an existing source subject to the requirements of this subpart shall control emissions

of organic HAP's to the level represented by the following equation:

$$E_A = 0.02 \sum EPV_1 + \sum EPV_2 + 0.05 \sum ES_1 + \sum ES_2 + \sum EGLR_{1C} + \sum EGLR_2 + (R) \sum EMV_1 + \sum EMV_2 + \sum EWW_{1C} + \sum EWW_2$$

where:

$E_A$  = Emission rate, megagrams per year, allowed for the source.

$0.02 \sum EPV_1$  = Sum of the residual emissions, megagrams per year, from all Group 1 miscellaneous process vents, as defined in §63.641.

$\sum EPV_2$  = Sum of the emissions, megagrams per year, from all Group 2 process vents, as defined in §63.641.

$0.05 \sum ES_1$  = Sum of the residual emissions, megagrams per year, from all Group 1 storage vessels, as defined in §63.641.

$\sum ES_2$  = Sum of the emissions, megagrams per year, from all Group 2 storage vessels, as defined in §63.641.

$\sum EGLR_{1C}$  = Sum of the residual emissions, megagrams per year, from all Group 1 gasoline loading racks, as defined in §63.641.

$\sum EGLR_2$  = Sum of the emissions, megagrams per year, from all Group 2 gasoline loading racks, as defined in §63.641.

$(R) \sum EMV_1$  = Sum of the residual emissions megagrams per year, from all Group 1 marine tank vessels, as defined in §63.641.

$R$  = 0.03 for existing sources, 0.02 for new sources.

$\sum EMV_2$  = Sum of the emissions, megagrams per year from all Group 2 marine tank vessels, as defined in §63.641.

$\sum EWW_{1C}$  = Sum of the residual emissions from all Group 1 wastewater streams, as defined in §63.641. This term is calculated for each Group 1 stream according to the equation for  $EWW_{ic}$  in §63.652(h)(6).

$\sum EWW_2$  = Sum of emissions from all Group 2 wastewater streams, as defined in §63.641.

The emissions level represented by this equation is dependent on the collection of emission points in the source. The level is not fixed and can change as the emissions from each emission point

change or as the number of emission points in the source changes.

(h) The owner or operator of a new source subject to the requirements of this subpart shall control emissions of organic HAP's to the level represented by the equation in paragraph (g) of this section.

(i) The owner or operator of an existing source shall demonstrate compliance with the emission standard in paragraph (g) of this section by following the procedures specified in paragraph (k) of this section for all emission points, or by following the emissions averaging compliance approach specified in paragraph (l) of this section for specified emission points and the procedures specified in paragraph (k) of this section for all other emission points within the source.

(j) The owner or operator of a new source shall demonstrate compliance with the emission standard in paragraph (h) of this section only by following the procedures in paragraph (k) of this section. The owner or operator of a new source may not use the emissions averaging compliance approach.

(k) The owner or operator of an existing source may comply, and the owner or operator of a new source shall comply, with the miscellaneous process vent provisions in §§ 63.643 through 63.645, the storage vessel provisions in § 63.646, the wastewater provisions in § 63.647, the gasoline loading rack provisions in § 63.650, and the marine tank vessel loading operation provisions in § 63.651 of this subpart.

(1) The owner or operator using this compliance approach shall also comply with the requirements of § 63.654 as applicable.

(2) The owner or operator using this compliance approach is not required to calculate the annual emission rate specified in paragraph (g) of this section.

(l) The owner or operator of an existing source may elect to control some of the emission points within the source to different levels than specified under §§ 63.643 through 63.647, §§ 63.650 and 63.651 by using an emissions averaging compliance approach as long as the overall emissions for the source do not exceed the emission level specified in paragraph (g) of this section. The

owner or operator using emissions averaging shall meet the requirements in paragraphs (l)(1) and (l)(2) of this section.

(1) Calculate emission debits and credits for those emission points involved in the emissions average according to the procedures specified in § 63.652; and

(2) Comply with the requirements of §§ 63.652, 63.653, and 63.654, as applicable.

(m) A State may restrict the owner or operator of an existing source to using only the procedures in paragraph (k) of this section to comply with the emission standard in paragraph (g) of this section. Such a restriction would preclude the source from using an emissions averaging compliance approach.

[60 FR 43260, Aug. 18, 1995; 61 FR 7051, Feb. 23, 1996, as amended at 61 FR 29879, June 12, 1996]

#### **§ 63.643 Miscellaneous process vent provisions.**

(a) The owner or operator of a Group 1 miscellaneous process vent as defined in § 63.641 shall comply with the requirements of either paragraphs (a)(1) or (a)(2) of this section.

(1) Reduce emissions of organic HAP's using a flare that meets the requirements of § 63.11(b) of subpart A of this part.

(2) Reduce emissions of organic HAP's, using a control device, by 98 weight-percent or to a concentration of 20 parts per million by volume, on a dry basis, corrected to 3 percent oxygen, whichever is less stringent. Compliance can be determined by measuring either organic HAP's or TOC's using the procedures in § 63.645.

(b) If a boiler or process heater is used to comply with the percentage of reduction requirement or concentration limit specified in paragraph (a)(2) of this section, then the vent stream shall be introduced into the flame zone of such a device, or in a location such that the required percent reduction or concentration is achieved. Testing and monitoring is required only as specified in § 63.644(a) and § 63.645 of this subpart.

**§ 63.644 Monitoring provisions for miscellaneous process vents.**

(a) Except as provided in paragraph (b) of this section, each owner or operator of a Group 1 miscellaneous process vent that uses a combustion device to comply with the requirements in § 63.643(a) shall install the monitoring equipment specified in paragraph (a)(1), (a)(2), (a)(3), or (a)(4) of this section, depending on the type of combustion device used. All monitoring equipment shall be installed, calibrated, maintained, and operated according to manufacturer's specifications.

(1) Where an incinerator is used, a temperature monitoring device equipped with a continuous recorder is required.

(i) Where an incinerator other than a catalytic incinerator is used, a temperature monitoring device shall be installed in the firebox or in the ductwork immediately downstream of the firebox in a position before any substantial heat exchange occurs.

(ii) Where a catalytic incinerator is used, temperature monitoring devices shall be installed in the gas stream immediately before and after the catalyst bed.

(2) Where a flare is used, a device (including but not limited to a thermocouple, an ultraviolet beam sensor, or an infrared sensor) capable of continuously detecting the presence of a pilot flame is required.

(3) Any boiler or process heater with a design heat input capacity greater than or equal to 44 megawatt or any boiler or process heater in which all vent streams are introduced into the flame zone is exempt from monitoring.

(4) Any boiler or process heater less than 44 megawatts design heat capacity where the vent stream is not introduced into the flame zone is required to use a temperature monitoring device in the firebox equipped with a continuous recorder.

(b) An owner or operator of a Group 1 miscellaneous process vent may request approval to monitor parameters other than those listed in paragraph (a) of this section. The request shall be submitted according to the procedures specified in § 63.654(h). Approval shall be requested if the owner or operator:

(1) Uses a control device other than an incinerator, boiler, process heater, or flare; or

(2) Uses one of the control devices listed in paragraph (a) of this section, but seeks to monitor a parameter other than those specified in paragraph (a) of this section.

(c) The owner or operator of a Group 1 miscellaneous process vent using a vent system that contains bypass lines that could divert a vent stream away from the control device used to comply with paragraph (a) of this section shall comply with either paragraph (c)(1) or (c)(2) of this section. Equipment such as low leg drains, high point bleeds, analyzer vents, open-ended valves or lines, pressure relief valves needed for safety reasons, and equipment subject to § 63.648 are not subject to this paragraph.

(1) Install, calibrate, maintain, and operate a flow indicator that determines whether a vent stream flow is present at least once every hour. Records shall be generated as specified in § 63.654(h) and (i). The flow indicator shall be installed at the entrance to any bypass line that could divert the vent stream away from the control device to the atmosphere; or

(2) Secure the bypass line valve in the closed position with a car-seal or a lock-and-key type configuration. A visual inspection of the seal or closure mechanism shall be performed at least once every month to ensure that the valve is maintained in the closed position and the vent stream is not diverted through the bypass line.

(d) The owner or operator shall establish a range that ensures compliance with the emissions standard for each parameter monitored under paragraphs (a) and (b) of this section. In order to establish the range, the information required in § 63.654(f)(3) shall be submitted in the Notification of Compliance Status report.

(e) Each owner or operator of a control device subject to the monitoring provisions of this section shall operate the control device in a manner consistent with the minimum and/or maximum operating parameter value or procedure required to be monitored under paragraphs (a) and (b) of this section. Operation of the control device in a

manner that constitutes a period of excess emissions, as defined in §63.654(g)(6), or failure to perform procedures required by this section shall constitute a violation of the applicable emission standard of this subpart.

[60 FR 43260, Aug. 18, 1995, as amended at 61 FR 29880, June 12, 1996]

**§63.645 Test methods and procedures for miscellaneous process vents.**

(a) To demonstrate compliance with §63.643, an owner or operator shall follow §63.116 except for §63.116 (a)(1), (d) and (e) of subpart G of this part except as provided in paragraphs (b) through (d) and paragraph (i) of this section.

(b) All references to §63.113(a)(1) or (a)(2) in §63.116 of subpart G of this part shall be replaced with §63.643(a)(1) or (a)(2), respectively.

(c) In §63.116(c)(4)(ii)(C) of subpart G of this part, organic HAP's in the list of HAP's in table 1 of this subpart shall be considered instead of the organic HAP's in table 2 of subpart F of this part.

(d) All references to §63.116(b)(1) or (b)(2) shall be replaced with paragraphs (d)(1) and (d)(2) of this section, respectively.

(1) Any boiler or process heater with a design heat input capacity of 44 megawatts or greater.

(2) Any boiler or process heater in which all vent streams are introduced into the flame zone.

(e) For purposes of determining the TOC emission rate, as specified under paragraph (f) of this section, the sampling site shall be after the last product recovery device (as defined in §63.641 of this subpart) (if any recovery devices are present) but prior to the inlet of any control device (as defined in §63.641 of this subpart) that is present, prior to any dilution of the process vent stream, and prior to release to the atmosphere.

(1) Methods 1 or 1A of 40 CFR part 60, appendix A, as appropriate, shall be used for selection of the sampling site.

(2) No traverse site selection method is needed for vents smaller than 0.10 meter in diameter.

(f) Except as provided in paragraph (g) of this section, an owner or operator seeking to demonstrate that a process vent TOC mass flow rate is less

than 33 kilograms per day for an existing source or less than 6.8 kilograms per day for a new source in accordance with the Group 2 process vent definition of this subpart shall determine the TOC mass flow rate by the following procedures:

(1) The sampling site shall be selected as specified in paragraph (e) of this section.

(2) The gas volumetric flow rate shall be determined using Methods 2, 2A, 2C, or 2D of 40 CFR part 60, appendix A, as appropriate.

(3) Method 18 or Method 25A of 40 CFR part 60, appendix A shall be used to measure concentration; alternatively, any other method or data that has been validated according to the protocol in Method 301 of appendix A of this part may be used. If Method 25A is used, and the TOC mass flow rate calculated from the Method 25A measurement is greater than or equal to 33 kilograms per day for an existing source or 6.8 kilograms per day for a new source, Method 18 may be used to determine any non-VOC hydrocarbons that may be deducted to calculate the TOC (minus non-VOC hydrocarbons) concentration and mass flow rate. The following procedures shall be used to calculate parts per million by volume concentration:

(i) The minimum sampling time for each run shall be 1 hour in which either an integrated sample or four grab samples shall be taken. If grab sampling is used, then the samples shall be taken at approximately equal intervals in time, such as 15-minute intervals during the run.

(ii) The TOC concentration ( $C_{TOC}$ ) is the sum of the concentrations of the individual components and shall be computed for each run using the following equation if Method 18 is used:

$$C_{TOC} = \frac{\sum_{i=1}^x \left( \sum_{j=1}^n C_{ji} \right)}{X}$$

where:

$C_{TOC}$ =Concentration of TOC (minus methane and ethane), dry basis, parts per million by volume.

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$C_{ji}$ =Concentration of sample component  $j$  of the sample  $i$ , dry basis, parts per million by volume.

$n$ =Number of components in the sample.

$x$ =Number of samples in the sample run.

(4) The emission rate of TOC (minus methane and ethane) ( $E_{TOC}$ ) shall be calculated using the following equation if Method 18 is used:

$$E = K_2 \left[ \sum_{j=1}^n C_j M_j \right] Q_s$$

where:

$E$ =Emission rate of TOC (minus methane and ethane) in the sample, kilograms per day.

$K_2$ =Constant,  $2.494 \times 10^{-6}$  (parts per million)<sup>-1</sup> (gram-mole per standard cubic meter) (kilogram per gram) (minutes per hour), where the standard temperature (standard cubic meter) is at 20 °C.

$C_j$ =Concentration on a dry basis of organic compound  $j$  in parts per million as measured by Method 18 of 40 CFR part 60, appendix A, as indicated in paragraph (f)(3) of this section.  $C_j$  includes all organic compounds measured minus methane and ethane.

$M_j$ =Molecular weight of organic compound  $j$ , gram per gram-mole.

$Q_s$ =Vent stream flow rate, dry standard cubic meters per minute, at a temperature of 20 °C.

(5) If Method 25A is used the emission rate of TOC ( $E_{TOC}$ ) shall be calculated using the following equation:

$$E = K_2 C_{TOC} Q_s$$

where:

$E$ =Emission rate of TOC (minus methane and ethane) in the sample, kilograms per day.

$K_2$ =Constant,  $2.494 \times 10^{-6}$  (parts per million)<sup>-1</sup> (gram-mole per standard cubic meter) (kilogram per gram) (minutes per hour), where the standard temperature (standard cubic meter) is at 20 °C.

$C_{TOC}$ =Concentration of TOC on a dry basis in parts per million volume as measured by Method 25A of 40 CFR part 60, appendix A, as indicated in paragraph (f)(3) of this section.

$Q_s$ =Vent stream flow rate, dry standard cubic meters per minute, at a temperature of 20 °C.

(g) Engineering assessment may be used to determine the TOC emission rate for the representative operating condition expected to yield the highest daily emission rate.

(1) Engineering assessment includes, but is not limited to, the following:

(i) Previous test results provided the tests are representative of current operating practices at the process unit.

(ii) Bench-scale or pilot-scale test data representative of the process under representative operating conditions.

(iii) TOC emission rate specified or implied within a permit limit applicable to the process vent.

(iv) Design analysis based on accepted chemical engineering principles, measurable process parameters, or physical or chemical laws or properties. Examples of analytical methods include, but are not limited to:

(A) Use of material balances based on process stoichiometry to estimate maximum TOC concentrations;

(B) Estimation of maximum flow rate based on physical equipment design such as pump or blower capacities; and

(C) Estimation of TOC concentrations based on saturation conditions.

(v) All data, assumptions, and procedures used in the engineering assessment shall be documented.

(h) The owner or operator of a Group 2 process vent shall recalculate the TOC emission rate for each process vent, as necessary, whenever process changes are made to determine whether the vent is in Group 1 or Group 2. Examples of process changes include, but are not limited to, changes in production capacity, production rate, or catalyst type, or whenever there is replacement, removal, or addition of recovery equipment. For purposes of this paragraph, process changes do not include: process upsets; unintentional, temporary process changes; and changes that are within the range on which the original calculation was based.

(1) The TOC emission rate shall be recalculated based on measurements of vent stream flow rate and TOC as specified in paragraphs (e) and (f) of this

section, as applicable, or on best engineering assessment of the effects of the change. Engineering assessments shall meet the specifications in paragraph (g) of this section.

(2) Where the recalculated TOC emission rate is greater than 33 kilograms per day for an existing source or greater than 6.8 kilograms per day for a new source, the owner or operator shall submit a report as specified in § 63.654 (f), (g), or (h) and shall comply with the appropriate provisions in § 63.643 by the dates specified in § 63.640.

(i) A compliance determination for visible emissions shall be conducted within 150 days of the compliance date using Method 22 of 40 CFR part 60, appendix A, to determine visible emissions.

[60 FR 43260, Aug. 18, 1995, as amended at 61 FR 29880, June 12, 1996]

**§ 63.646 Storage vessel provisions.**

(a) Each owner or operator of a Group 1 storage vessel subject to this subpart shall comply with the requirements of §§ 63.119 through 63.121 except as provided in paragraphs (b) through (l) of this section.

(b) As used in this section, all terms not defined in § 63.641 shall have the meaning given them in 40 CFR part 63, subparts A or G. The Group 1 storage vessel definition presented in § 63.641 shall apply in lieu of the Group 1 storage vessel definitions presented in tables 5 and 6 of § 63.119 of subpart G of this part.

(1) An owner or operator may use good engineering judgement or test results to determine the stored liquid weight percent total organic HAP for purposes of group determination. Data, assumptions, and procedures used in the determination shall be documented.

(2) When an owner or operator and the Administrator do not agree on whether the weight percent organic HAP in the stored liquid is above or below 4 percent for existing sources and 2 percent for new sources, Method 18 of 40 CFR part 60, appendix A shall be used.

(c) The following paragraphs do not apply to storage vessels at existing sources subject to this subpart: § 63.119 (b)(5), (b)(6), (c)(2), and (d)(2).

(d) References shall apply as specified in paragraphs (d)(1) through (d)(10) of this section.

(1) All references to § 63.100(k) of subpart F of this part (or the schedule provisions and the compliance date) shall be replaced with § 63.640(h),

(2) All references to April 22, 1994 shall be replaced with August 18, 1995.

(3) All references to December 31, 1992 shall be replaced with July 15, 1994.

(4) All references to the compliance dates specified in § 63.100 of subpart F shall be replaced with § 63.640 (h) through (m).

(5) All references to § 63.150 in § 63.119 of subpart G of this part shall be replaced with § 63.652.

(6) All references to § 63.113(a)(2) of subpart G shall be replaced with § 63.643(a)(2) of this subpart.

(7) All references to § 63.126(b)(1) of subpart G shall be replaced with § 63.422(b) of subpart R of this part.

(8) All references to § 63.128(a) of subpart G shall be replaced with § 63.425, paragraphs (a) through (c) and (e) through (h) of subpart R of this part.

(9) All references to § 63.139(d)(1) in § 63.120(d)(1)(ii) of subpart G are not applicable. For sources subject to this subpart, such references shall mean that 40 CFR 61.355 is applicable.

(10) All references to § 63.139(c) in § 63.120(d)(1)(ii) of subpart G are not applicable. For sources subject to this subpart, such references shall mean that § 63.647 of this subpart is applicable.

(e) When complying with the inspection requirements of § 63.120 of subpart G of this part, owners and operators of storage vessels at existing sources subject to this subpart are not required to comply with the provisions for gaskets, slotted membranes, and sleeve seals.

(f) The following paragraphs (f)(1), (f)(2), and (f)(3) of this section apply to Group 1 storage vessels at existing sources:

(1) If a cover or lid is installed on an opening on a floating roof, the cover or lid shall remain closed except when the cover or lid must be open for access.

(2) Rim space vents are to be set to open only when the floating roof is not floating or when the pressure beneath the rim seal exceeds the manufacturer's recommended setting.

(3) Automatic bleeder vents are to be closed at all times when the roof is floating except when the roof is being floated off or is being landed on the roof leg supports.

(g) Failure to perform inspections and monitoring required by this section shall constitute a violation of the applicable standard of this subpart.

(h) References in §§ 63.119 through 63.121 to § 63.122(g)(1), § 63.151, and references to initial notification requirements do not apply.

(i) References to the Implementation Plan in § 63.120, paragraphs (d)(2) and (d)(3)(i) shall be replaced with the Notification of Compliance Status report.

(j) References to the Notification of Compliance Status report in § 63.152(b) shall be replaced with § 63.654(f).

(k) References to the Periodic Reports in § 63.152(c) shall be replaced with § 63.654(g).

(l) The State or local permitting authority can waive the notification requirements of §§ 63.120(a)(5), 63.120(a)(6), 63.120(b)(10)(ii), and 63.120(b)(10)(iii) for all or some storage vessels at petroleum refineries subject to this subpart. The State or local permitting authority may also grant permission to refill storage vessels sooner than 30 days after submitting the notifications in §§ 63.120(a)(6) or 63.120(b)(10)(iii) for all storage vessels at a refinery or for individual storage vessels on a case-by-case basis.

[60 FR 43260, Aug. 18, 1995, as amended at 61 FR 29880, June 12, 1996]

#### § 63.647 Wastewater provisions.

(a) Except as provided in paragraph (b) of this section, each owner or operator of a Group 1 wastewater stream shall comply with the requirements of §§ 61.340 through 61.355 of 40 CFR part 61, subpart FF for each process wastewater stream that meets the definition in § 63.641.

(b) As used in this section, all terms not defined in § 63.641 shall have the meaning given them in the Clean Air Act or in 40 CFR part 61, subpart FF, § 61.341.

(c) Each owner or operator required under subpart FF of 40 CFR part 61 to perform periodic measurement of benzene concentration in wastewater, or to monitor process or control device

operating parameters shall operate in a manner consistent with the minimum or maximum (as appropriate) permitted concentration or operating parameter values. Operation of the process, treatment unit, or control device resulting in a measured concentration or operating parameter value outside the permitted limits shall constitute a violation of the emission standards. Failure to perform required leak monitoring for closed vent systems and control devices or failure to repair leaks within the time period specified in subpart FF of 40 CFR part 61 shall constitute a violation of the standard.

#### § 63.648 Equipment leak standards.

(a) Each owner or operator of an existing source subject to the provisions of this subpart shall comply with the provisions of 40 CFR part 60 subpart VV and paragraph (b) of this section except as provided in paragraphs (a)(1), (a)(2), and (c) through (i) of this section. Each owner or operator of a new source subject to the provisions of this subpart shall comply with subpart H of this part except as provided in paragraphs (c) through (i) of this section.

(1) For purposes of compliance with this section, the provisions of 40 CFR part 60, subpart VV apply only to equipment in organic HAP service, as defined in § 63.641 of this subpart.

(2) Calculation of percentage leaking equipment components for subpart VV of 40 CFR part 60 may be done on a process unit basis or a sourcewide basis. Once the owner or operator has decided, all subsequent calculations shall be on the same basis unless a permit change is made.

(b) The use of monitoring data generated before August 18, 1995 to qualify for less frequent monitoring of valves and pumps as provided under 40 CFR part 60 subpart VV or subpart H of this part and paragraph (c) of this section (i.e., quarterly or semiannually) is governed by the requirements of paragraphs (b)(1) and (b)(2) of this section.

(1) Monitoring data must meet the test methods and procedures specified in § 60.485(b) of 40 CFR part 60, subpart VV or § 63.180(b)(1) through (b)(5) of subpart H of this part except for minor departures.

(2) Departures from the criteria specified in § 60.485(b) of 40 CFR part 60 subpart VV or § 63.180(b)(1) through (b)(5) of subpart H of this part or from the monitoring frequency specified in subpart VV or in paragraph (c) of this section (such as every 6 weeks instead of monthly or quarterly) are minor and do not significantly affect the quality of the data. An example of a minor departure is monitoring at a slightly different frequency (such as every 6 weeks instead of monthly or quarterly). Failure to use a calibrated instrument is not considered a minor departure.

(c) In lieu of complying with the existing source provisions of paragraph (a) in this section, an owner or operator may elect to comply with the requirements of §§ 63.161 through 63.169, 63.171, 63.172, 63.175, 63.176, 63.177, 63.179, and 63.180 of subpart H of this part except as provided in paragraphs (c)(1) through (c)(10) and (e) through (i) of this section.

(1) The instrument readings that define a leak for light liquid pumps subject to § 63.163 of subpart H of this part and gas/vapor and light liquid valves subject to § 63.168 of subpart H of this part are specified in table 2 of this subpart.

(2) In phase III of the valve standard, the owner or operator may monitor valves for leaks as specified in paragraphs (c)(2)(i) or (c)(2)(ii) of this section.

(i) If the owner or operator does not elect to monitor connectors, then the owner or operator shall monitor valves according to the frequency specified in table 8 of this subpart.

(ii) If an owner or operator elects to monitor connectors according to the provisions of § 63.649, paragraphs (b), (c), or (d), then the owner or operator shall monitor valves at the frequencies specified in table 9 of this subpart.

(3) The owner or operator shall decide no later than the first required monitoring period after the phase I compliance date specified in § 63.640(h) whether to calculate the percentage leaking valves on a process unit basis or on a sourcewide basis. Once the owner or operator has decided, all subsequent calculations shall be on the same basis unless a permit change is made.

(4) The owner or operator shall decide no later than the first monitoring period after the phase III compliance date specified in § 63.640(h) whether to monitor connectors according to the provisions in § 63.649, paragraphs (b), (c), or (d).

(5) Connectors in gas/vapor service or light liquid service are subject to the requirements for connectors in heavy liquid service in § 63.169 of subpart H of this part (except for the agitator provisions). The leak definition for valves, connectors, and instrumentation systems subject to § 63.169 is 1,000 parts per million.

(6) In phase III of the pump standard, except as provided in paragraph (c)(7) of this section, owners or operators that achieve less than 10 percent of light liquid pumps leaking or three light liquid pumps leaking, whichever is greater, shall monitor light liquid pumps monthly.

(7) Owners or operators that achieve less than 3 percent of light liquid pumps leaking or one light liquid pump leaking, whichever is greater, shall monitor light liquid pumps quarterly.

(8) An owner or operator may make the election described in paragraphs (c)(3) and (c)(4) of this section at any time except that any election to change after the initial election shall be treated as a permit modification according to the terms of part 70 of this chapter.

(9) When complying with the requirements of § 63.168(e)(3)(i), non-repairable valves shall be included in the calculation of percent leaking valves the first time the valve is identified as leaking and non-repairable. Otherwise, a number of non-repairable valves up to a maximum of 1 percent per year of the total number of valves in organic HAP service up to a maximum of 3 percent may be excluded from calculation of percent leaking valves for subsequent monitoring periods. When the number of non-repairable valves exceeds 3 percent of the total number of valves in organic HAP service, the number of non-repairable valves exceeding 3 percent of the total number shall be included in the calculation of percent leaking valves.

(10) If in phase III of the valve standard any valve is designated as being

leakless, the owner or operator has the option of following the provisions of 40 CFR 60.482-7(f). If an owner or operator chooses to comply with the provisions of 40 CFR 60.482-7(f), the valve is exempt from the valve monitoring provisions of §63.168 of subpart H of this part.

(d) Upon startup of new sources, the owner or operator shall comply with §63.163(a)(1)(ii) of subpart H of this part for light liquid pumps and §63.168(a)(1)(ii) of subpart H of this part for gas/vapor and light liquid valves.

(e) For reciprocating pumps in heavy liquid service, owners and operators are not required to comply with the requirements in §63.169 of subpart H of this part.

(f) Reciprocating pumps in light liquid service are exempt from §§63.163 and 60.482 if recasting the distance piece or reciprocating pump replacement is required.

(g) Compressors in hydrogen service are exempt from the requirements of paragraphs (a) and (c) of this section if an owner or operator demonstrates that a compressor is in hydrogen service.

(1) Each compressor is presumed not to be in hydrogen service unless an owner or operator demonstrates that the piece of equipment is in hydrogen service.

(2) For a piece of equipment to be considered in hydrogen service, it must be determined that the percentage hydrogen content can be reasonably expected always to exceed 50 percent by volume.

(i) For purposes of determining the percentage hydrogen content in the process fluid that is contained in or contacts a compressor, the owner or operator shall use either:

(A) Procedures that conform to those specified in §60.593(b)(2) of 40 part 60, subpart GGG.

(B) Engineering judgment to demonstrate that the percentage content exceeds 50 percent by volume, provided the engineering judgment demonstrates that the content clearly exceeds 50 percent by volume.

(J) When an owner or operator and the Administrator do not agree on whether a piece of equipment is in hydrogen service, the procedures in para-

graph (g)(2)(i)(A) of this section shall be used to resolve the disagreement.

(2) If an owner or operator determines that a piece of equipment is in hydrogen service, the determination can be revised only by following the procedures in paragraph (g)(2)(i)(A) of this section.

(h) Each owner or operator of a source subject to the provisions of this subpart must maintain all records for a minimum of 5 years.

(i) Reciprocating compressors are exempt from seal requirements if recasting the distance piece or compressor replacement is required.

[60 FR 43260, Aug. 18, 1995, as amended at 61 FR 29880, June 12, 1996]

**§63.649 Alternative means of emission limitation: Connectors in gas/vapor service and light liquid service.**

(a) If an owner or operator elects to monitor valves according to the provisions of §63.648(c)(2)(ii), the owner or operator shall implement one of the connector monitoring programs specified in paragraphs (b), (c), or (d) of this section.

(b) *Random 200 connector alternative.* The owner or operator shall implement a random sampling program for accessible connectors of 2.0 inches nominal diameter or greater. The program does not apply to inaccessible or unsafe-to-monitor connectors, as defined in §63.174 of subpart H. The sampling program shall be implemented source-wide.

(1) Within the first 12 months after the phase III compliance date specified in §63.640(h), a sample of 200 connectors shall be randomly selected and monitored using Method 21 of 40 CFR part 60, appendix A.

(2) The instrument reading that defines a leak is 1,000 parts per million.

(3) When a leak is detected, it shall be repaired as soon as practicable, but no later than 15 calendar days after the leak is detected except as provided in paragraph (e) of this section. A first attempt at repair shall be made no later than 5 calendar days after the leak is detected.

(4) If a leak is detected, the connector shall be monitored for leaks within the first 3 months after its repair.

(5) After conducting the initial survey required in paragraph (b)(1) of this section, the owner or operator shall conduct subsequent monitoring of connectors at the frequencies specified in paragraphs (b)(5)(i) through (b)(5)(iv) of this section.

(i) If the percentage leaking connectors is 2.0 percent or greater, the owner or operator shall survey a random sample of 200 connectors once every 6 months.

(ii) If the percentage leaking connectors is 1.0 percent or greater but less than 2.0 percent, the owner or operator shall survey a random sample of 200 connectors once per year.

(iii) If the percentage leaking connectors is 0.5 percent or greater but less than 1.0 percent, the owner or operator shall survey a random sample of 200 connectors once every 2 years.

(iv) If the percentage leaking connectors is less than 0.5 percent, the owner or operator shall survey a random sample of 200 connectors once every 4 years.

(6) Physical tagging of the connectors to indicate that they are subject to the monitoring provisions is not required. Connectors may be identified by the area or length of pipe and need not be individually identified.

(c) *Connector inspection alternative.* The owner or operator shall implement a program to monitor all accessible connectors in gas/vapor service that are 2.0 inches (nominal diameter) or greater and inspect all accessible connectors in light liquid service that are 2 inches (nominal diameter) or greater as described in paragraphs (c)(1) through (c)(7) of this section. The program does not apply to inaccessible or unsafe-to-monitor connectors.

(1) Within 12 months after the phase III compliance date specified in § 63.640(h), all connectors in gas/vapor service shall be monitored using Method 21 of 40 CFR part 60 appendix A. The instrument reading that defines a leak is 1,000 parts per million.

(2) All connectors in light liquid service shall be inspected for leaks. A leak is detected if liquids are observed to be dripping at a rate greater than three drops per minute.

(3) When a leak is detected, it shall be repaired as soon as practicable, but

no later than 15 calendar days after the leak is detected except as provided in paragraph (e) of this section. A first attempt at repair shall be made no later than 5 calendar days after the leak is detected.

(4) If a leak is detected, connectors in gas/vapor service shall be monitored for leaks within the first 3 months after repair. Connectors in light liquid service shall be inspected for indications of leaks within the first 3 months after repair. A leak is detected if liquids are observed to be dripping at a rate greater than three drops per minute.

(5) After conducting the initial survey required in paragraphs (c)(1) and (c)(2) of this section, the owner or operator shall conduct subsequent monitoring at the frequencies specified in paragraphs (c)(5)(i) through (c)(5)(iii) of this section.

(i) If the percentage leaking connectors is 2.0 percent or greater, the owner or operator shall monitor or inspect, as applicable, the connectors once per year.

(ii) If the percentage leaking connectors is 1.0 percent or greater but less than 2.0 percent, the owner or operator shall monitor or inspect, as applicable, the connectors once every 2 years.

(iii) If the percentage leaking connectors is less than 1.0 percent, the owner or operator shall monitor or inspect, as applicable, the connectors once every 4 years.

(6) The percentage leaking connectors shall be calculated for connectors in gas/vapor service and for connectors in light liquid service. The data for the two groups of connectors shall not be pooled for the purpose of determining the percentage leaking connectors.

(i) The percentage leaking connectors shall be calculated as follows:

$$\% C_L = [(C_L - C_{AN}) / (C_L + C_c)] \times 100$$

where:

$\% C_L$  = Percentage leaking connectors.

$C_L$  = Number of connectors including nonrepairables, measured at 1,000 parts per million or greater, by Method 21 of 40 CFR part 60, Appendix A.

$C_{AN}$  = Number of allowable nonrepairable connectors, as determined by monitoring, not to exceed 3 percent

of the total connector population,  $C_t$ .

$C_t$ =Total number of monitored connectors, including nonrepairables, in the process unit.

$C_c$ =Optional credit for removed connectors= $0.67 \times$ net number (i.e., the total number of connectors removed minus the total added) of connectors in organic HAP service removed from the process unit after the applicability date set forth in §63.640(h)(4)(iii) for existing process units, and after the date of start-up for new process units. If credits are not taken, then  $C_c=0$ .

(ii) Nonrepairable connectors shall be included in the calculation of percentage leaking connectors the first time the connector is identified as leaking and nonrepairable. Otherwise, a number of nonrepairable connectors up to a maximum of 1 percent per year of the total number of connectors in organic HAP service up to a maximum of 3 percent may be excluded from calculation of percentage leaking connectors for subsequent monitoring periods.

(iii) If the number of nonrepairable connectors exceeds 3 percent of the total number of connectors in organic HAP service, the number of nonrepairable connectors exceeding 3 percent of the total number shall be included in the calculation of the percentage leaking connectors.

(7) Physical tagging of the connectors to indicate that they are subject to the monitoring provisions is not required. Connectors may be identified by the area or length of pipe and need not be individually identified.

(d) *Subpart H program.* The owner or operator shall implement a program to comply with the provisions in §63.174 of this part.

(e) Delay of repair of connectors for which leaks have been detected is allowed if repair is not technically feasible by normal repair techniques without a process unit shutdown. Repair of this equipment shall occur by the end of the next process unit shutdown.

(1) Delay of repair is allowed for equipment that is isolated from the process and that does not remain in organic HAP service.

(2) Delay of repair for connectors is also allowed if:

(i) The owner or operator determines that emissions of purged material resulting from immediate repair would be greater than the fugitive emissions likely to result from delay of repair, and

(ii) When repair procedures are accomplished, the purged material would be collected and destroyed or recovered in a control device.

(f) Any connector that is designated as an unsafe-to-repair connector is exempt from the requirements of paragraphs (b)(3) and (b)(4), (c)(3) and (c)(4), or (d) of this section if:

(1) The owner or operator determines that repair personnel would be exposed to an immediate danger as a consequence of complying with paragraphs (b)(3) and (b)(4), (c)(3) and (c)(4), of this section; or

(2) The connector will be repaired before the end of the next scheduled process unit shutdown.

(g) The owner or operator shall maintain records to document that the connector monitoring or inspections have been conducted as required and to document repair of leaking connectors as applicable.

#### §63.650 Gasoline loading rack provisions.

(a) Except as provided in paragraphs (b) through (c) of this section, each owner or operator of a gasoline loading rack classified under Standard Industrial Classification code 2911 located within a contiguous area and under common control with a petroleum refinery shall comply with subpart R, §§63.421, 63.422 (a) through (c), 63.425 (a) through (c), 63.425 (e) through (h), 63.427 (a) and (b), and 63.428 (b), (c), (g)(1), and (h)(1) through (h)(3).

(b) As used in this section, all terms not defined in §63.641 shall have the meaning given them in subpart A or in 40 CFR part 63, subpart R. The §63.641 definition of "affected source" applies under this section.

(c) Gasoline loading racks regulated under this subpart are subject to the compliance dates specified in §63.640(h).

[60 FR 43260, Aug. 18, 1995, as amended at 61 FR 29880, June 12, 1996]

**§ 63.651 Marine tank vessel loading operation provisions.**

(a) Except as provided in paragraphs (b) through (d) of this section, each owner or operator of a marine tank vessel loading operation located at a petroleum refinery shall comply with the requirements of §§ 63.560 through 63.567.

(b) As used in this section, all terms not defined in § 63.641 shall have the meaning given them in subpart A or in 40 CFR part 63, subpart Y. The § 63.641 definition of "affected source" applies under this section.

(c) The Initial Notification Report under § 63.567(b) is not required.

(d) The compliance time of 4 years after promulgation of 40 CFR part 63, subpart Y does not apply. The compliance time is specified in § 63.640(h)(3).

[60 FR 43260, Aug. 18, 1995, as amended at 61 FR 29880, June 12, 1996]

**§ 63.652 Emissions averaging provisions.**

(a) This section applies to owners or operators of existing sources who seek to comply with the emission standard in § 63.642(g) by using emissions averaging according to § 63.642(l) rather than following the provisions of §§ 63.643 through 63.647, and §§ 63.650 and 63.651. Existing marine tank vessel loading operations unable to comply with the standard by using emissions averaging are those marine tank vessels subject to 40 CFR 63.562(e) of this part and the Valdez Marine Terminal source.

(b) The owner or operator shall develop and submit for approval an Implementation Plan containing all of the information required in § 63.653(d) for all points to be included in an emissions average. The Implementation Plan shall identify all emission points to be included in the emissions average. This must include any Group 1 emission points to which the reference control technology (defined in § 63.641) is not applied and all other emission points being controlled as part of the average.

(c) The following emission points can be used to generate emissions averaging credits if control was applied after November 15, 1990 and if sufficient information is available to determine the

appropriate value of credits for the emission point:

(1) Group 2 emission points;

(2) Group 1 storage vessels, Group 1 wastewater streams, Group 1 gasoline loading racks, Group 1 marine tank vessels, and Group 1 miscellaneous process vents that are controlled by a technology that the Administrator or permitting authority agrees has a higher nominal efficiency than the reference control technology. Information on the nominal efficiencies for such technologies must be submitted and approved as provided in paragraph (i) of this section; and

(3) Emission points from which emissions are reduced by pollution prevention measures. Percentages of reduction for pollution prevention measures shall be determined as specified in paragraph (j) of this section.

(i) For a Group 1 emission point, the pollution prevention measure must reduce emissions more than the reference control technology would have had the reference control technology been applied to the emission point instead of the pollution prevention measure except as provided in paragraph (c)(3)(ii) of this section.

(ii) If a pollution prevention measure is used in conjunction with other controls for a Group 1 emission point, the pollution prevention measure alone does not have to reduce emissions more than the reference control technology, but the combination of the pollution prevention measure and other controls must reduce emissions more than the reference control technology would have had it been applied instead.

(d) The following emission points cannot be used to generate emissions averaging credits:

(1) Emission points already controlled on or before November 15, 1990 unless the level of control is increased after November 15, 1990, in which case credit will be allowed only for the increase in control after November 15, 1990;

(2) Group 1 emission points that are controlled by a reference control technology unless the reference control technology has been approved for use in a different manner and a higher nominal efficiency has been assigned

according to the procedures in paragraph (i) of this section. For example, it is not allowable to claim that an internal floating roof meeting only the specifications stated in the reference control technology definition in §63.641 (i.e., that meets the specifications of §63.119(b) of subpart G but does not have controlled fittings per §63.119 (b)(5) and (b)(6) of subpart G applied to a storage vessel is achieving greater than 95 percent control;

(3) Emission points on shutdown process units. Process units that are shut down cannot be used to generate credits or debits;

(4) Wastewater that is not process wastewater or wastewater streams treated in biological treatment units. These two types of wastewater cannot be used to generate credits or debits. Group 1 wastewater streams cannot be left undercontrolled or uncontrolled to generate debits. For the purposes of this section, the terms "wastewater" and "wastewater stream" are used to mean process wastewater; and

(5) Emission points controlled to comply with a State or Federal rule other than this subpart, unless the level of control has been increased after November 15, 1990 above what is required by the other State or Federal rule. Only the control above what is required by the other State or Federal rule will be credited. However, if an emission point has been used to generate emissions averaging credit in an approved emissions average, and the point is subsequently made subject to a State or Federal rule other than this subpart, the point can continue to generate emissions averaging credit for the purpose of complying with the previously approved average.

(e) For all points included in an emissions average, the owner or operator shall:

(1) Calculate and record monthly debits for all Group 1 emission points that are controlled to a level less stringent than the reference control technology for those emission points. Equations in paragraph (g) of this section shall be used to calculate debits.

(2) Calculate and record monthly credits for all Group 1 or Group 2 emission points that are overcontrolled to compensate for the debits. Equations

in paragraph (h) of this section shall be used to calculate credits. Emission points and controls that meet the criteria of paragraph (c) of this section may be included in the credit calculation, whereas those described in paragraph (d) of this section shall not be included.

(3) Demonstrate that annual credits calculated according to paragraph (h) of this section are greater than or equal to debits calculated for the same annual compliance period according to paragraph (g) of this section.

(i) The initial demonstration in the Implementation Plan that credit-generating emission points will be capable of generating sufficient credits to offset the debits from the debit-generating emission points must be made under representative operating conditions.

(ii) After the compliance date, actual operating data will be used for all debit and credit calculations.

(4) Demonstrate that debits calculated for a quarterly (3-month) period according to paragraph (g) of this section are not more than 1.30 times the credits for the same period calculated according to paragraph (h) of this section. Compliance for the quarter shall be determined based on the ratio of credits and debits from that quarter, with 30 percent more debits than credits allowed on a quarterly basis.

(5) Record and report quarterly and annual credits and debits in the Periodic Reports as specified in §63.654(g)(8). Every fourth Periodic Report shall include a certification of compliance with the emissions averaging provisions as required by §63.654(g)(8)(iii).

(f) Debits and credits shall be calculated in accordance with the methods and procedures specified in paragraphs (g) and (h) of this section, respectively, and shall not include emissions from the following:

(1) More than 20 individual emission points. Where pollution prevention measures (as specified in paragraph (j)(1) of this section) are used to control emission points to be included in an emissions average, no more than 25 emission points may be included in the average. For example, if two emission

points to be included in an emissions average are controlled by pollution prevention measures, the average may include up to 22 emission points.

(2) Periods of startup, shutdown, and malfunction as described in the source's startup, shutdown, and malfunction plan required by §63.6(e)(3) of subpart A of this part.

(3) For emission points for which continuous monitors are used, periods of excess emissions as defined in §63.654(g)(6)(i). For these periods, the calculation of monthly credits and debits shall be adjusted as specified in paragraphs (f)(3)(i) through (f)(3)(iii) of this section.

(i) No credits would be assigned to the credit-generating emission point.

(ii) Maximum debits would be assigned to the debit-generating emission point.

(iii) The owner or operator may use the procedures in paragraph (l) of this section to demonstrate to the Administrator that full or partial credits or debits should be assigned.

(g) Debits are generated by the difference between the actual emissions from a Group 1 emission point that is uncontrolled or is controlled to a level less stringent than the reference control technology, and the emissions allowed for Group 1 emission point. Debits shall be calculated as follows:

(1) The overall equation for calculating sourcewide debits is:

$$\text{Debits} = \sum_{i=1}^n (\text{EPV}_{i\text{ACTUAL}} - (0.02)\text{EPV}_{iu}) + \sum_{i=1}^n (\text{ES}_{i\text{ACTUAL}} - (0.05)\text{ES}_{iu}) + \sum_{i=1}^n (\text{EGLR}_{i\text{ACTUAL}} - \text{EGLR}_{ic}) + \sum_{i=1}^n (\text{EMV}_{i\text{ACTUAL}} - (0.03)\text{EMV}_{iu})$$

where:

Debits and all terms of the equation are in units of megagrams per month, and

$\text{EPV}_{i\text{ACTUAL}}$ =Emissions from each Group 1 miscellaneous process vent i that is uncontrolled or is controlled to a level less stringent than the reference control technology. This is calculated according to paragraph (g)(2) of this section.

(0.02)  $\text{EPV}_{iu}$ =Emissions from each Group 1 miscellaneous process vent i if the reference control technology had been applied to the uncontrolled emissions, calculated according to paragraph (g)(2) of this section.

$\text{ES}_{i\text{ACTUAL}}$ =Emissions from each Group 1 storage vessel i that is uncontrolled or is controlled to a level less stringent than the reference control technology. This is calculated according to paragraph (g)(3) of this section.

(0.05)  $\text{ES}_{iu}$ =Emissions from each Group 1 storage vessel i if the reference control technology had been applied to the uncontrolled emissions,

calculated according to paragraph (g)(3) of this section.

$\text{EGLR}_{i\text{ACTUAL}}$ =Emissions from each Group 1 gasoline loading rack i that is uncontrolled or is controlled to a level less stringent than the reference control technology. This is calculated according to paragraph (g)(4) of this section.

$\text{EGLR}_{ic}$ =Emissions from each Group 1 gasoline loading rack i if the reference control technology had been applied to the uncontrolled emissions. This is calculated according to paragraph (g)(4) of this section.

$\text{EMV}_{i\text{ACTUAL}}$ =Emissions from each Group 1 marine tank vessel i that is uncontrolled or is controlled to a level less stringent than the reference control technology. This is calculated according to paragraph (g)(5) of this section.

(0.03)  $\text{EMV}_{iu}$ =Emissions from each Group 1 marine tank vessel i if the reference control technology had been applied to the uncontrolled emissions calculated according to paragraph (g)(5) of this section.

n=The number of Group 1 emission points being included in the emissions average. The value of n is not necessarily the same for each kind of emission point.

(2) Emissions from miscellaneous process vents shall be calculated as follows:

(i) For purposes of determining miscellaneous process vent stream flow rate, organic HAP concentrations, and temperature, the sampling site shall be after the final product recovery device, if any recovery devices are present; before any control device (for miscellaneous process vents, recovery devices shall not be considered control devices); and before discharge to the atmosphere. Method 1 or 1A of part 60, appendix A shall be used for selection of the sampling site.

(ii) The following equation shall be used for each miscellaneous process vent i to calculate EPV<sub>iu</sub>:

$$EPV_{iu} = (2.494 \times 10^{-9}) Qh \left( \sum_{j=1}^n C_j M_j \right)$$

where:

EPV<sub>iu</sub>=Uncontrolled process vent emission rate from miscellaneous process vent i, megagrams per month.

Q=Vent stream flow rate, dry standard cubic meters per minute, measured using Methods 2, 2A, 2C, or 2D of part 60 appendix A, as appropriate.

h=Monthly hours of operation during which positive flow is present in the vent, hours per month.

C<sub>j</sub>=Concentration, parts per million by volume, dry basis, of organic HAP j

as measured by Method 18 of part 60 appendix A.

M<sub>j</sub>=Molecular weight of organic HAP j, gram per gram-mole.

n=Number of organic HAP's in the miscellaneous process vent stream.

(A) The values of Q, C<sub>j</sub>, and M<sub>j</sub> shall be determined during a performance test conducted under representative operating conditions. The values of Q, C<sub>j</sub>, and M<sub>j</sub> shall be established in the Notification of Compliance Status report and must be updated as provided in paragraph (g)(2)(ii)(B) of this section.

(B) If there is a change in capacity utilization other than a change in monthly operating hours, or if any other change is made to the process or product recovery equipment or operation such that the previously measured values of Q, C<sub>j</sub>, and M<sub>j</sub> are no longer representative, a new performance test shall be conducted to determine new representative values of Q, C<sub>j</sub>, and M<sub>j</sub>. These new values shall be used to calculate debits and credits from the time of the change forward, and the new values shall be reported in the next Periodic Report.

(iii) The following procedures and equations shall be used to calculate EPV<sub>iACTUAL</sub>:

(A) If the vent is not controlled by a control device or pollution prevention measure, EPV<sub>iACTUAL</sub> = EPV<sub>iu</sub>, where EPV<sub>iu</sub> is calculated according to the procedures in paragraphs (g)(2)(i) and (g)(2)(ii) of this section.

(B) If the vent is controlled using a control device or a pollution prevention measure achieving less than 98-percent reduction,

$$EPV_{iACTUAL} = EPV_{iu} \times \left( 1 - \frac{\text{Percent reduction}}{100\%} \right)$$

(1) The percent reduction shall be measured according to the procedures in §63.116 of subpart G if a combustion control device is used. For a flare meeting the criteria in §63.116(a) of subpart G, or a boiler or process heater meeting the criteria in §63.645(d) of

this subpart or §63.116(b) of subpart G, the percentage of reduction shall be 98 percent. If a noncombustion control device is used, percentage of reduction shall be demonstrated by a performance test at the inlet and outlet of the device, or, if testing is not feasible, by

a control design evaluation and documented engineering calculations.

(2) For determining debits from miscellaneous process vents, product recovery devices shall not be considered control devices and cannot be assigned a percentage of reduction in calculating  $EPV_{iACTUAL}$ . The sampling site for measurement of uncontrolled emissions is after the final product recovery device.

(3) Procedures for calculating the percentage of reduction of pollution prevention measures are specified in paragraph (j) of this section.

(3) Emissions from storage vessels shall be calculated as specified in § 63.150(g)(3) of subpart G.

(4) Emissions from gasoline loading racks shall be calculated as follows:

(i) The following equation shall be used for each gasoline loading rack  $i$  to calculate  $EGLR_{iu}$ :

$$EGLR_{iu} = \left(1.20 \times 10^{-7}\right) \frac{SPMG}{T}$$

where:

$EGLR_{iu}$ =Uncontrolled transfer HAP emission rate from gasoline loading rack  $i$ , megagrams per month

$S$ =Saturation factor, dimensionless (see table 33 of subpart G).

$P$ =Weighted average rack partial pressure of organic HAP's transferred at the rack during the month, kilopascals.

$M$ =Weighted average molecular weight of organic HAP's transferred at the gasoline loading rack during the month, gram per gram-mole.

$G$ =Monthly volume of gasoline transferred from gasoline loading rack, liters per month.

$T$ =Weighted rack bulk liquid loading temperature during the month, degrees kelvin (degrees Celsius  $^{\circ}C + 273$ ).

(ii) The following equation shall be used for each gasoline loading rack  $i$  to calculate the weighted average rack partial pressure:

$$P = \frac{\sum_{j=1}^{j=n} (P_j)(G_j)}{G}$$

where:

$P_j$ =Maximum true vapor pressure of individual organic HAP transferred at the rack, kilopascals.

$G$ =Monthly volume of organic HAP transferred, liters per month, and

$$G = \sum_{j=1}^{j=n} G_j$$

$G_j$ =Monthly volume of individual organic HAP transferred at the gasoline loading rack, liters per month.

$n$ =Number of organic HAP's transferred at the gasoline loading rack.

(iii) The following equation shall be used for each gasoline loading rack  $i$  to calculate the weighted average rack molecular weight:

$$M = \frac{\sum_{j=1}^{j=n} (M_j)(G_j)}{G}$$

where:

$M_j$ =Molecular weight of individual organic HAP transferred at the rack, gram per gram-mole.

$G$ ,  $G_j$ , and  $n$  are as defined in paragraph (g)(4)(ii) of this section.

(iv) The following equation shall be used for each gasoline loading rack  $i$  to calculate the monthly weighted rack bulk liquid loading temperature:

$$T = \frac{\sum_{j=1}^{j=n} (T_j)(G_j)}{G}$$

$T_j$ =Average annual bulk temperature of individual organic HAP loaded at the gasoline loading rack, kelvin (degrees Celsius  $^{\circ}C + 273$ ).

$G$ ,  $G_j$ , and  $n$  are as defined in paragraph (g)(4)(ii) of this section.

(v) The following equation shall be used to calculate  $EGLR_{ic}$ :

$$EGLR_{ic} = 1 \times 10^{-8} G$$

$G$  is as defined in paragraph (g)(4)(ii) of this section.

(vi) The following procedures and equations shall be used to calculate  $EGLR_{iACTUAL}$ :

(A) If the gasoline loading rack is not controlled,  $EGLR_{iACTUAL} = EGLR_{iu}$ , where  $EGLR_{iu}$  is calculated using the equations specified in paragraphs (g)(4)(i) through (g)(4)(iv) of this section.

(B) If the gasoline loading rack is controlled using a control device or a pollution prevention measure not achieving the requirement of less than 10 milligrams of TOC per liter of gasoline loaded,

$$EGLR_{ic} = 1 \times 10^{-8} G$$

(1) The percent reduction for a control device shall be measured according to the procedures and test methods specified in §63.128(a) of subpart G. If testing is not feasible, the percentage of reduction shall be determined through a design evaluation according to the procedures specified in §63.128(h) of subpart G.

(2) Procedures for calculating the percentage of reduction for pollution prevention measures are specified in paragraph (j) of this section.

(5) Emissions from marine tank vessel loading shall be calculated as follows:

(i) The following equation shall be used for each marine tank vessel i to calculate  $EMV_{iu}$ :

$$EMV_{iu} = \sum_{i=1}^m (Q_i)(F_i)(P_i)$$

where:

$EMV_{iu}$ =Uncontrolled marine tank vessel HAP emission rate from marine

tank vessel i, megagrams per month.

$Q_i$ =Quantity of commodity loaded (per vessel type), liters.

$F_i$ =Emission factor, megagrams per liter.

$P_i$ =Percent HAP.

m=Number of combinations of commodities and vessel types loaded.

Emission factors shall be based on test data or emission estimation procedures specified in §63.565(l) of subpart Y.

(ii) The following procedures and equations shall be used to calculate  $EMV_{iACTUAL}$ :

(A) If the marine tank vessel is not controlled,  $EMV_{iACTUAL} = EMV_{iu}$ , where  $EMV_{iu}$  is calculated using the equations specified in paragraph (g)(5)(i) of this section.

(B) If the marine tank vessel is controlled using a control device or a pollution prevention measure achieving less than 97-percent reduction,

$$EMV_{iACTUAL} = EMV_{iu} \left( \frac{1 - \text{Percent reduction}}{100\%} \right)$$

(1) The percent reduction for a control device shall be measured according to the procedures and test methods specified in §63.565(c) of subpart Y. If testing is not feasible, the percentage of reduction shall be determined through a design evaluation according to the procedures specified in §63.128(h) of subpart G.

(2) Procedures for calculating the percentage of reduction for pollution

prevention measures are specified in paragraph (j) of this section.

(h) Credits are generated by the difference between emissions that are allowed for each Group 1 and Group 2 emission point and the actual emissions from a Group 1 or Group 2 emission point that has been controlled after November 15, 1990 to a level more stringent than what is required by this subpart or any other State or Federal

rule or statute. Credits shall be calculated as follows:

(1) The overall equation for calculating sourcewide credits is:

$$\begin{aligned} \text{Credits} = & D \sum_{i=1}^n ((0.02) EPV1_{iu} - EPV1_{iACTUAL}) + D \sum_{i=1}^m (EPV2_{iBASE} - EPV2_{iACTUAL}) + \\ & D \sum_{i=1}^n ((0.05) ES1_{iu} - ES1_{iACTUAL}) + D \sum_{i=1}^m (ES2_{iBASE} - ES2_{iACTUAL}) + \\ & D \sum_{i=1}^n (EGLR_{ic} - EGLR1_{iACTUAL}) + D \sum_{i=1}^m (EGLR2_{iBASE} - EGLR2_{iACTUAL}) + \\ & D \sum_{i=1}^n ((0.03) EMV1_{iu} - EMV1_{iACTUAL}) + D \sum_{i=1}^m (EMV2_{iBASE} - EMV2_{iACTUAL}) + \\ & D \sum_{i=1}^n (EWW1_{ic} - EWW1_{iACTUAL}) + D \sum_{i=1}^m (EWW2_{iBASE} - EWW2_{iACTUAL}) \end{aligned}$$

where:

Credits and all terms of the equation are in units of megagrams per month, the baseline date is November 15, 1990, and

D=Discount factor=0.9 for all credit-generating emission points except those controlled by a pollution prevention measure, which will not be discounted.

EPV1<sub>iACTUAL</sub>=Emissions for each Group 1 miscellaneous process vent i that is controlled to a level more stringent than the reference control technology, calculated according to paragraph (h)(2) of this section.

(0.02) EPV1<sub>iu</sub>=Emissions from each Group 1 miscellaneous process vent i if the reference control technology had been applied to the uncontrolled emissions. EPV1<sub>iu</sub> is calculated according to paragraph (h)(2) of this section.

EPV2<sub>iBASE</sub>=Emissions from each Group 2 miscellaneous process vent; at the baseline date, as calculated in paragraph (h)(2) of this section.

EPV2<sub>iACTUAL</sub>=Emissions from each Group 2 miscellaneous process vent that is controlled, calculated according to paragraph (h)(2) of this section.

ES1<sub>iACTUAL</sub>=Emissions from each Group 1 storage vessel i that is controlled to a level more stringent than the reference control technology, calculated according to paragraph (h)(3) of this section.

(0.05) ES1<sub>iu</sub>=Emissions from each Group 1 storage vessel i if the reference control technology had been applied to the uncontrolled emissions. ES1<sub>iu</sub> is calculated according to paragraph (h)(3) of this section.

ES2<sub>iACTUAL</sub>=Emissions from each Group 2 storage vessel i that is controlled, calculated according to paragraph (h)(3) of this section.

ES2<sub>iBASE</sub>=Emissions from each Group 2 storage vessel i at the baseline date, as calculated in paragraph (h)(3) of this section.

EGLR1<sub>iACTUAL</sub>=Emissions from each Group 1 gasoline loading rack i that is controlled to a level more stringent than the reference control technology, calculated according to paragraph (h)(4) of this section.

EGLR<sub>ic</sub>=Emissions from each Group 1 gasoline loading rack i if the reference control technology had been

applied to the uncontrolled emissions.  $EGLR_{iu}$  is calculated according to paragraph (h)(4) of this section.

$EGRL2_{iACTUAL}$ =Emissions from each Group 2 gasoline loading rack  $i$  that is controlled, calculated according to paragraph (h)(4) of this section.

$EGLR2_{iBASE}$ =Emissions from each Group 2 gasoline loading rack  $i$  at the baseline date, as calculated in paragraph (h)(4) of this section.

$EMV1_{iACTUAL}$ =Emissions from each Group 1 marine tank vessel  $i$  that is controlled to a level more stringent than the reference control technology, calculated according to paragraph (h)(4) of this section.

(0.03) $EMV1_{iu}$ =Emissions from each Group 1 marine tank vessel  $i$  if the reference control technology had been applied to the uncontrolled emissions.  $EMV1_{iu}$  is calculated according to paragraph (h)(5) of this section.

$EMV2_{iACTUAL}$ =Emissions from each Group 2 marine tank vessel  $i$  that is controlled, calculated according to paragraph (h)(5) of this section.

$EMV2_{iBASE}$ =Emissions from each Group 2 marine tank vessel  $i$  at the baseline date, as calculated in paragraph (h)(5) of this section.

$EWV1_{iACTUAL}$ =Emissions from each Group 1 wastewater stream  $i$  that is controlled to a level more stringent than the reference control technology, calculated according to paragraph (h)(6) of this section.

$EWV1_{ic}$ =Emissions from each Group 1 wastewater stream  $i$  if the reference control technology had been applied to the uncontrolled emissions, calculated according to paragraph (h)(6) of this section.

$EWV2_{iACTUAL}$ =Emissions from each Group 2 wastewater stream  $i$  that is controlled, calculated according to paragraph (h)(6) of this section.

$EWV2_{iBASE}$ =Emissions from each Group 2 wastewater stream  $i$  at the baseline date, calculated according to paragraph (h)(6) of this section.

$n$ =Number of Group 1 emission points included in the emissions average. The value of  $n$  is not necessarily the same for each kind of emission point.

$m$ =Number of Group 2 emission points included in the emissions average. The value of  $m$  is not necessarily the same for each kind of emission point.

(i) For an emission point controlled using a reference control technology, the percentage of reduction for calculating credits shall be no greater than the nominal efficiency associated with the reference control technology, unless a higher nominal efficiency is assigned as specified in paragraph (h)(1)(ii) of this section.

(ii) For an emission point controlled to a level more stringent than the reference control technology, the nominal efficiency for calculating credits shall be assigned as described in paragraph (i) of this section. A reference control technology may be approved for use in a different manner and assigned a higher nominal efficiency according to the procedures in paragraph (i) of this section.

(iii) For an emission point controlled using a pollution prevention measure, the nominal efficiency for calculating credits shall be determined as described in paragraph (j) of this section.

(2) Emissions from process vents shall be determined as follows:

(i) Uncontrolled emissions from miscellaneous process vents,  $EPV1_{iu}$ , shall be calculated according to the procedures and equation for  $EPV_{iu}$  in paragraphs (g)(2)(i) and (g)(2)(ii) of this section.

(ii) Actual emissions from miscellaneous process vents controlled using a technology with an approved nominal efficiency greater than 98 percent or a pollution prevention measure achieving greater than 98 percent emission reduction,  $EPV1_{iACTUAL}$ , shall be calculated according to the following equation:

$$EPV1_{iACTUAL} = EPV1_{iu} \left( 1 - \frac{\text{Nominal efficiency}\%}{100\%} \right)$$

(iii) The following procedures shall be used to calculate actual emissions from Group 2 process vents,  $EPV2_{iACTUAL}$ :

(A) For a Group 2 process vent controlled by a control device, a recovery

device applied as a pollution prevention project, or a pollution prevention measure, if the control achieves a percentage of reduction less than or equal to a 98 percent reduction,

$$EPV2_{iACTUAL} = EPV2_{iu} \times \left( 1 - \frac{\text{Percent reduction}}{100\%} \right)$$

(1)  $EPV2_{iu}$  shall be calculated according to the equations and procedures for  $EPV_{iu}$  in paragraphs (g)(2)(i) and (g)(2)(ii) of this section except as provided in paragraph (h)(2)(iii)(A)(3) of this section.

(2) The percentage of reduction shall be calculated according to the procedures in paragraphs (g)(2)(iii)(B)(1) through (g)(2)(iii)(B)(3) of this section except as provided in paragraph (h)(2)(iii)(A)(4) of this section.

(3) If a recovery device was added as part of a pollution prevention project,  $EPV2_{iu}$  shall be calculated prior to that recovery device. The equation for  $EPV_{iu}$  in paragraph (g)(2)(ii) of this sec-

tion shall be used to calculate  $EPV2_{iu}$ ; however, the sampling site for measurement of vent stream flow rate and organic HAP concentration shall be at the inlet of the recovery device.

(4) If a recovery device was added as part of a pollution prevention project, the percentage of reduction shall be demonstrated by conducting a performance test at the inlet and outlet of that recovery device.

(B) For a Group 2 process vent controlled using a technology with an approved nominal efficiency greater than a 98 percent or a pollution prevention measure achieving greater than 98 percent reduction,

$$EPV2_{iACTUAL} = EPV2_{iu} \left( 1 - \frac{\text{Nominal efficiency}\%}{100\%} \right)$$

(iv) Emissions from Group 2 process vents at baseline,  $EPV2_{iBASE}$ , shall be calculated as follows:

(A) If the process vent was uncontrolled on November 15, 1990,  $EPV2_{iBASE} = EPV2_{iu}$ , and shall be cal-

culated according to the procedures and equation for  $EPV_{iu}$  in paragraphs (g)(2)(i) and (g)(2)(ii) of this section.

(B) If the process vent was controlled on November 15, 1990,

$$EPV2_{iBASE} = EPV2_{iu} \left( 1 - \frac{\text{Percent reduction}\%}{100\%} \right)$$

where  $EPV_{2iu}$  is calculated according to the procedures and equation for  $EPV_{iu}$  in paragraphs (g)(2)(i) and (g)(2)(ii) of this section. The percentage of reduction shall be calculated according to the procedures specified in paragraphs (g)(2)(iii)(B)(1) through (g)(2)(iii)(B)(3) of this section.

(C) If a recovery device was added to a process vent as part of a pollution prevention project initiated after November 15, 1990,  $EPV_{2iBASE} = EPV_{2iu}$ , where  $EPV_{2iu}$  is calculated according to paragraph (h)(2)(iii)(A)(3) of this section.

(3) Emissions from storage vessels shall be determined as specified in § 63.150(h)(3) of subpart G, except as follows:

(i) All references to § 63.119(b) in § 63.150(h)(3) of subpart G shall be replaced with: § 63.119 (b) or § 63.119(b) except for § 63.119(b)(5) and (b)(6).

(ii) All references to § 63.119(c) in § 63.150(h)(3) of subpart G shall be replaced with: § 63.119(c) or § 63.119(c) except for § 63.119(c)(2).

(iii) All references to § 63.119(d) in § 63.150(h)(3) of subpart G shall be replaced with: § 63.119(d) or § 63.119(d) except for § 63.119(d)(2).

(4) Emissions from gasoline loading racks shall be determined as follows:

(i) Uncontrolled emissions from Group 1 gasoline loading racks,  $EGLR_{1iu}$ , shall be calculated according to the procedures and equations for  $EGLR_{iu}$  as described in paragraphs (g)(4)(i) through (g)(4)(iv) of this section.

(ii) Emissions from Group 1 gasoline loading racks if the reference control technology had been applied,  $EGLR_{ic}$ , shall be calculated according to the procedures and equations in paragraph (g)(4)(v) of this section.

(iii) Actual emissions from Group 1 gasoline loading racks controlled to less than 10 milligrams of TOC per liter of gasoline loaded;  $EGLR_{iACTUAL}$ , shall be calculated according to the following equation:

$$EGLR_{iACTUAL} = EGLR_{iu} \left( 1 - \frac{\text{Nominal efficiency}}{100\%} \right)$$

(iv) The following procedures shall be used to calculate actual emissions from Group 2 gasoline loading racks,  $EGLR_{2iACTUAL}$ :

(A) For a Group 2 gasoline loading rack controlled by a control device or a

pollution prevention measure achieving emissions reduction but where emissions are greater than the 10 milligrams of TOC per liter of gasoline loaded requirement,

$$EGLR_{2iACTUAL} = EGLR_{2iu} \left( 1 - \frac{\text{Percent reduction}}{100\%} \right)$$

(1)  $EGLR_{2iu}$  shall be calculated according to the equations and procedures for  $EGLR_{iu}$  in paragraphs (g)(4)(i) through (g)(4)(iv) of this section.

(2) The percentage of reduction shall be calculated according to the procedures in paragraphs (g)(4)(vi)(B)(1) and (g)(4)(vi)(B)(2) of this section.

(B) For a Group 2 gasoline loading rack controlled by using a technology with an approved nominal efficiency greater than 98 percent or a pollution prevention measure achieving greater than a 98-percent reduction,

$$EGLR2_{iACTUAL} = EGLR2_{iu} \left( 1 - \frac{\text{Nominal efficiency}}{100\%} \right)$$

(v) Emissions from Group 2 gasoline loading racks at baseline,  $EGLR2_{iBASE}$ , shall be calculated as follows:

(A) If the gasoline loading rack was uncontrolled on November 15, 1990,  $EGLR2_{iBASE} = EGLR2_{iu}$ , and shall be cal-

culated according to the procedures and equations for  $EGLR_{iu}$  in paragraphs (g)(4)(i) through (g)(4)(iv) of this section.

(B) If the gasoline loading rack was controlled on November 15, 1990,

$$EGLR2_{iBASE} = EGLR2_{iu} \left( 1 - \frac{\text{Percent reduction}}{100\%} \right)$$

where  $EGLR2_{iu}$  is calculated according to the procedures and equations for  $EGLR_{iu}$  in paragraphs (g)(4)(i) through (g)(4)(iv) of this section. Percentage of reduction shall be calculated according to the procedures in paragraphs (g)(4)(vi)(B)(1) and (g)(4)(vi)(B)(2) of this section.

(5) Emissions from marine tank vessels shall be determined as follows:

(i) Uncontrolled emissions from Group 1 marine tank vessels,  $EMV1_{iu}$ ,

shall be calculated according to the procedures and equations for  $EMV_{iu}$  as described in paragraph (g)(5)(i) of this section.

(ii) Actual emissions from Group 1 marine tank vessels controlled using a technology or pollution prevention measure with an approved nominal efficiency greater than 97 percent,  $EMV_{iACTUAL}$ , shall be calculated according to the following equation:

$$EMV1_{iACTUAL} = EMV1_{iu} \left( 1 - \frac{\text{Nominal efficiency}}{100\%} \right)$$

(iii) The following procedures shall be used to calculate actual emissions from Group 2 marine tank vessels,  $EMV2_{iACTUAL}$ :

(A) For a Group 2 marine tank vessel controlled by a control device or a pollution prevention measure achieving a percentage of reduction less than or equal to 97 percent reduction,

$$EMV2_{iACTUAL} = EMV2_{iu} \left( 1 - \frac{\text{Percent reduction}}{100\%} \right)$$

(1)  $EMV2_{iu}$  shall be calculated according to the equations and procedures for  $EMV_{iu}$  in paragraph (g)(5)(i) of this section.

(2) The percentage of reduction shall be calculated according to the proce-

dures in paragraphs (g)(5)(ii)(B)(1) and (g)(5)(ii)(B)(2) of this section.

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(B) For a Group 2 marine tank vessel controlled using a technology or a pollution prevention measure with an approved nominal efficiency greater than 97 percent,

$$EMV2_{iACTUAL} = EMV2_{iu} \left( 1 - \frac{\text{Nominal efficiency}}{100\%} \right)$$

(iv) Emissions from Group 2 marine tank vessels at baseline,  $EMV2_{iBASE}$ , shall be calculated as follows:

(A) If the marine terminal was uncontrolled on November 15, 1990,  $EMV2_{iBASE}$  equals  $EMV2_{iu}$ , and shall be calculated according to the procedures and equations for  $EMV_{iu}$  in paragraph (g)(5)(i) of this section.

(B) If the marine tank vessel was controlled on November 15, 1990,

$$EMV2_{iBASE} = EMV2_{iu} \left( 1 - \frac{\text{Percent reduction}}{100\%} \right)$$

where  $EMV2_{iu}$  is calculated according to the procedures and equations for  $EMV_{iu}$  in paragraph (g)(5)(i) of this section. Percentage of reduction shall be calculated according to the procedures in paragraphs (g)(5)(ii)(B)(1) and (g)(5)(ii)(B)(2) of this section.

§ 61.342(c)(1)(iii) of 40 CFR part 61, subpart FF, as applicable, and the emissions from the waste management units subject to those requirements are routed to a control device that reduces HAP emissions by 95 percent or greater.

(6) Emissions from wastewater shall be determined as follows:

(B) *Treatment process* has the meaning given in § 61.341 of 40 CFR part 61, subpart FF except that it does not include biological treatment units.

(i) For purposes of paragraphs (h)(4)(ii) through (h)(4)(vi) of this section, the following terms will have the meaning given them in paragraphs (h)(6)(i)(A) through (h)(6)(i)(C) of this section.

(C) *Vapor control device* means the control device that receives emissions vented from a treatment process or treatment processes.

(A) *Correctly suppressed* means that a wastewater stream is being managed according to the requirements of §§ 61.343 through 61.347 or

(ii) The following equation shall be used for each wastewater stream  $i$  to calculate  $EW_{ic}$ :

$$EW_{ic} = (6.0 \times 10^{-8}) Q_i H_i \sum_{m=1}^s (1 - Fr_m) Fe_{mHAP_{im}} + (0.05)(6.0 \times 10^{-8}) Q_i H_i \sum_{m=1}^s (Fr_m HAP_{im})$$

where:

$H_i$  = Number of hours during the month that wastewater stream  $i$  was generated, hours per month.

$EW_{ic}$  = Monthly wastewater stream emission rate if wastewater stream  $i$  were controlled by the reference control technology, megagrams per month.

$Fr_m$  = Fraction removed of organic HAP  $m$  in wastewater, from table 7 of this subpart, dimensionless.

$Q_i$  = Average flow rate for wastewater stream  $i$ , liters per minute.

$F_{em}$ =Fraction emitted of organic HAP m in wastewater from table 7 of this subpart, dimensionless.

$s$ =Total number of organic HAP's in wastewater stream i.

$HAP_{im}$ =Average concentration of organic HAP m in wastewater stream i, parts per million by weight.

(A)  $HAP_{im}$  shall be determined for the point of generation or at a location downstream of the point of generation. Wastewater samples shall be collected using the sampling procedures specified in Method 25D of 40 CFR part 60, appendix A. Where feasible, samples shall be taken from an enclosed pipe prior to the wastewater being exposed to the atmosphere. When sampling from an enclosed pipe is not feasible, a minimum of three representative samples shall be collected in a manner to minimize exposure of the sample to the atmosphere and loss of organic HAP's prior to sampling. The samples collected may be analyzed by either of the following procedures:

(1) A test method or results from a test method that measures organic HAP concentrations in the wastewater, and that has been validated pursuant to section 5.1 or 5.3 of Method 301 of appendix A of this part may be used; or

(2) Method 305 of appendix A of this part may be used to determine  $C_{im}$ , the average volatile organic HAP concentration of organic HAP m in wastewater stream i, and then  $HAP_{im}$  may be calculated using the following equation:  $HAP_{im}=C_{im}/Fm_m$ , where  $Fm_m$

for organic HAP m is obtained from table 7 of this subpart.

(B) Values for  $Q_i$ ,  $HAP_{im}$ , and  $C_{im}$  shall be determined during a performance test conducted under representative conditions. The average value obtained from three test runs shall be used. The values of  $Q_i$ ,  $HAP_{im}$ , and  $C_{im}$  shall be established in the Notification of Compliance Status report and must be updated as provided in paragraph (h)(6)(i)(C) of this section.

(C) If there is a change to the process or operation such that the previously measured values of  $Q_i$ ,  $HAP_{im}$ , and  $C_{im}$  are no longer representative, a new performance test shall be conducted to determine new representative values of  $Q_i$ ,  $HAP_{im}$ , and  $C_{im}$ . These new values shall be used to calculate debits and credits from the time of the change forward, and the new values shall be reported in the next Periodic Report.

(iii) The following equations shall be used to calculate  $EWWi_{ACTUAL}$  for each Group 1 wastewater stream i that is correctly suppressed and is treated to a level more stringent than the reference control technology.

(A) If the Group 1 wastewater stream i is controlled using a treatment process or series of treatment processes with an approved nominal reduction efficiency for an individually speciated HAP that is greater than that specified in table 7 of this subpart, and the vapor control device achieves a percentage of reduction equal to 95 percent, the following equation shall be used:

$$EWWi_{ACTUAL} = (6.0 \times 10^{-8}) Q_i H_i \sum_{m=1}^s [F_{em} HAP_{im} (1 - PR_{im})] + 0.05 (6.0 \times 10^{-8}) Q_i H_i \sum_{m=1}^s [HAP_{im} PR_{im}]$$

Where:

$EWWi_{ACTUAL}$ =Monthly wastewater stream emission rate if wastewater stream i is treated to a level more stringent than the reference control technology, megagrams per month.

$PR_{im}$ =The efficiency of the treatment process, or series of treatment processes, that treat wastewater stream i in reducing the emission potential of organic HAP m in

wastewater, dimensionless, as calculated by:

$$PR_{im} = \frac{HAP_{im-in} - HAP_{im-out}}{HAP_{im-in}}$$

Where:

$HAP_{im-in}$ =Average concentration of organic HAP m, parts per million by weight, as defined and determined according to paragraph (h)(6)(ii)(A) of this section, in the wastewater

entering the first treatment process in the series.

HAP<sub>im-out</sub>=Average concentration of organic HAP m, parts per million by weight, as defined and determined according to paragraph (h)(6)(ii)(A) of this section, in the wastewater exiting the last treatment process in the series.

All other terms are as defined and determined in paragraph (h)(6)(ii) of this section.

(B) If the Group 1 wastewater stream i is not controlled using a treatment process or series of treatment processes with an approved nominal reduction efficiency for an individually speciated HAP that is greater than that specified in table 7 of this subpart, but the vapor control device has an approved nominal efficiency greater than 95 percent, the following equation shall be used:

$$EWW1_{iACTUAL} = (6.0 \times 10^{-8}) Q_i H_i \sum_{m=1}^s [F_{e_m} HAP_{im} (1 - A_m)] + \left(1 - \frac{\text{Nominal efficiency \%}}{100}\right) (6.0 \times 10^{-8}) Q_i H_i \sum_{m=1}^s [HAP_{im} A_m]$$

Where:

Nominal efficiency=Approved reduction efficiency of the vapor control device, dimensionless, as determined according to the procedures in §63.652(i).

A<sub>m</sub>=The efficiency of the treatment process, or series of treatment processes, that treat wastewater stream i in reducing the emission potential of organic HAP m in wastewater, dimensionless.

All other terms are as defined and determined in paragraphs (h)(6)(ii) and (h)(6)(iii)(A) of this section.

(1) If a steam stripper meeting the specifications in the definition of reference control technology for wastewater is used, A<sub>m</sub> shall be equal to the value of F<sub>r,m</sub> given in table 7 of this subpart.

(2) If an alternative control device is used, the percentage of reduction must be determined using the equation and methods specified in paragraph (h)(6)(iii)(A) of this section for deter-

mining PR<sub>im</sub>. If the value of PR<sub>im</sub> is greater than or equal to the value of F<sub>r,m</sub> given in table 7 of this subpart, then A<sub>m</sub> equals F<sub>r,m</sub> unless a higher nominal efficiency has been approved. If a higher nominal efficiency has been approved for the treatment process, the owner or operator shall determine EWW1<sub>iACTUAL</sub> according to paragraph (h)(6)(iii)(B) of this section rather than paragraph (h)(6)(iii)(A) of this section. If PR<sub>im</sub> is less than the value of F<sub>r,m</sub> given in table 7 of this subpart, emissions averaging shall not be used for this emission point.

(C) If the Group 1 wastewater stream i is controlled using a treatment process or series of treatment processes with an approved nominal reduction efficiency for an individually speciated hazardous air pollutant that is greater than that specified in table 7 of this subpart, and the vapor control device has an approved nominal efficiency greater than 95 percent, the following equation shall be used:

$$EWW1_{iACTUAL} = (6.0 \times 10^{-8}) Q_i H_i \sum_{m=1}^s [F_{e_m} HAP_{im} (1 - PR_{im})] + \left(1 - \frac{\text{Nominal efficiency \%}}{100}\right) (6.0 \times 10^{-8}) Q_i H_i \sum_{m=1}^s [HAP_{im} PR_{im}]$$

where all terms are as defined and determined in paragraphs (h)(6)(ii) and (h)(6)(iii)(A) of this section.

(iv) The following equation shall be used to calculate EWW2<sub>iBASE</sub> for each Group 2 wastewater stream i that on

November 15, 1990 was not correctly suppressed or was correctly suppressed but not treated:

$$EWW2_{iBASE} = (6.0 \times 10^{-8}) Q_i H_i \sum_{m=1}^s Fe_m HAP_{im}$$

Where:

$EWW2_{iBASE}$  = Monthly wastewater stream emission rate if wastewater stream i is not correctly suppressed, megagrams per month.

$Q_i$ ,  $H_i$ ,  $s$ ,  $Fe_m$ , and  $HAP_{im}$  are as defined and determined according to paragraphs (h)(6)(ii) and (h)(6)(iii)(A) of this section.

(v) The following equation shall be used to calculate  $EWW2_{iBASE}$  for each

Group 2 wastewater stream i on November 15, 1990 was correctly suppressed.  $EWW2_{iBASE}$  shall be calculated as if the control methods being used on November 15, 1990 are in place and any control methods applied after November 15, 1990 are ignored. However, values for the parameters in the equation shall be representative of present production levels and stream properties.

$$EWW2_{iBASE} = (6.0 \times 10^{-8}) Q_i H_i \sum_{m=1}^s [Fe_m HAP_{im} (1 - PR_{im})] + \left(1 - \frac{R_i}{100\%}\right) (6.0 \times 10^{-8}) Q_i H_i \sum_{m=1}^s [HAP_{im} PR_{im}]$$

where  $R_i$  is calculated according to paragraph (h)(6)(vii) of this section and all other terms are as defined and determined according to paragraphs (h)(6)(ii) and (h)(6)(iii)(A) of this section.

(vi) For Group 2 wastewater streams that are correctly suppressed,  $EWW2_{iACTUAL}$  shall be calculated according to the equation for  $EWW2_{iBASE}$  in paragraph (h)(6)(v) of this section.  $EWW2_{iACTUAL}$  shall be calculated with all control methods in place accounted for.

(vii) The reduction efficiency,  $R_i$ , of the vapor control device shall be demonstrated according to the following procedures:

(A) Sampling sites shall be selected using Method 1 or 1A of 40 CFR part 60, appendix A, as appropriate.

(B) The mass flow rate of organic compounds entering and exiting the control device shall be determined as follows:

(1) The time period for the test shall not be less than 3 hours during which at least three runs are conducted.

(2) A run shall consist of a 1-hour period during the test. For each run:

(i) The volume exhausted shall be determined using Methods 2, 2A, 2C, or 2D of 40 CFR part 60 appendix A, as appropriate;

(ii) The organic concentration in the vent stream entering and exiting the control device shall be determined using Method 18 of 40 CFR part 60, appendix A. Alternatively, any other test method validated according to the procedures in Method 301 of appendix A of this part may be used.

(3) The mass flow rate of organic compounds entering and exiting the control device during each run shall be calculated as follows:

$$E_a = \frac{0.0416}{10^6 \times m} \left[ \sum_{p=1}^m V_{ap} \left( \sum_{i=1}^n C_{aip} MW_i \right) \right]$$

$$E_b = \frac{0.0416}{10^6 \times m} \left[ \sum_{p=1}^m V_{bp} \left( \sum_{i=1}^n C_{bip} MW_i \right) \right]$$

Where:

$E_a$  = Mass flow rate of organic compounds exiting the control device, kilograms per hour.

$E_b$  = Mass flow rate of organic compounds entering the control device, kilograms per hour.

$V_{ap}$  = Average volumetric flow rate of vent stream exiting the control device during run p at standards conditions, cubic meters per hour.

$V_{bp}$  = Average volumetric flow rate of vent stream entering the control device during run  $p$  at standards conditions, cubic meters per hour.

$p$  = Run.

$m$  = Number of runs.

$C_{aip}$  = Concentration of organic compound  $i$  measured in the vent stream exiting the control device during run  $p$  as determined by Method 18 of 40 CFR part 60 appendix A, parts per million by volume on a dry basis.

$C_{bip}$  = Concentration of organic compound  $i$  measured in the vent stream entering the control device during run  $p$  as determined by Method 18 of 40 CFR part 60, appendix A, parts per million by volume on a dry basis.

$MW_i$  = Molecular weight of organic compound  $i$  in the vent stream, kilograms per kilogram-mole.

$n$  = Number of organic compounds in the vent stream.

0.0416 = Conversion factor for molar volume, kilograms-mole per cubic meter at 293 kelvin and 760 millimeters mercury absolute.

(C) The organic reduction efficiency for the control device shall be calculated as follows:

$$R = \frac{E_b - E_a}{E_b} \times 100$$

Where:

$R$  = Total organic reduction efficiency for the control device, percentage.

$E_b$  = Mass flow rate of organic compounds entering the control device, kilograms per hour.

$E_a$  = Mass flow rate of organic compounds exiting the control device, kilograms per hour.

(i) The following procedures shall be followed to establish nominal efficiencies. The procedures in paragraphs (i)(1) through (i)(6) of this section shall be followed for control technologies that are different in use or design from the reference control technologies and achieve greater percentages of reduction than the percentages of efficiency assigned to the reference control technologies in §63.641.

(1) In those cases where the owner or operator is seeking permission to take

credit for use of a control technology that is different in use or design from the reference control technology, and the different control technology will be used in more than three applications at a single plant site, the owner or operator shall submit the information specified in paragraphs (i)(1)(i) through (i)(1)(iv) of this section to the Administrator in writing:

(i) Emission stream characteristics of each emission point to which the control technology is or will be applied including the kind of emission point, flow, organic HAP concentration, and all other stream characteristics necessary to design the control technology or determine its performance;

(ii) Description of the control technology including design specifications;

(iii) Documentation demonstrating to the Administrator's satisfaction the control efficiency of the control technology. This may include performance test data collected using an appropriate EPA method or any other method validated according to Method 301 of appendix A of this part. If it is infeasible to obtain test data, documentation may include a design evaluation and calculations. The engineering basis of the calculation procedures and all inputs and assumptions made in the calculations shall be documented; and

(iv) A description of the parameter or parameters to be monitored to ensure that the control technology will be operated in conformance with its design and an explanation of the criteria used for selection of that parameter (or parameters).

(2) The Administrator shall determine within 120 calendar days whether an application presents sufficient information to determine nominal efficiency. The Administrator reserves the right to request specific data in addition to the items listed in paragraph (i)(1) of this section.

(3) The Administrator shall determine within 120 calendar days of the submittal of sufficient data whether a control technology shall have a nominal efficiency and the level of that nominal efficiency. If, in the Administrator's judgment, the control technology achieves a level of emission reduction greater than the reference control technology for a particular kind of

emission point, the Administrator will publish a FEDERAL REGISTER notice establishing a nominal efficiency for the control technology.

(4) The Administrator may grant conditional permission to take emission credits for use of the control technology on requirements that may be necessary to ensure operation and maintenance to achieve the specified nominal efficiency.

(5) In those cases where the owner or operator is seeking permission to take credit for use of a control technology that is different in use or design from the reference control technology and the different control technology will be used in no more than three applications at a single plant site, the information listed in paragraphs (i)(1)(i) through (i)(1)(iv) of this section can be submitted to the permitting authority for the source for approval instead of the Administrator.

(i) In these instances, use and conditions for use of the control technology can be approved by the permitting authority. The permitting authority shall follow the procedures specified in paragraphs (i)(2) through (i)(4) of this section except that, in these instances, a FEDERAL REGISTER notice is not required to establish the nominal efficiency for the different technology.

(ii) If, in reviewing the submittal, the permitting authority believes the control technology has broad applicability for use by other sources, the permitting authority shall submit the information provided in the application to the Director of the EPA Office of Air Quality Planning and Standards. The Administrator shall review the technology for broad applicability and may publish a FEDERAL REGISTER notice; however, this review shall not affect the permitting authority's approval of the nominal efficiency of the control technology for the specific application.

(6) If, in reviewing an application for a control technology for an emission point, the Administrator or permitting authority determines the control technology is not different in use or design from the reference control technology,

the Administrator or permitting authority shall deny the application.

(j) The following procedures shall be used for calculating the efficiency (percentage of reduction) of pollution prevention measures:

(1) A pollution prevention measure is any practice that meets the criteria of paragraphs (j)(1)(i) and (j)(1)(ii) of this section.

(i) A pollution prevention measure is any practice that results in a lesser quantity of organic HAP emissions per unit of product released to the atmosphere prior to out-of-process recycling, treatment, or control of emissions while the same product is produced.

(ii) Pollution prevention measures may include: Substitution of feedstocks that reduce HAP emissions, alterations to the production process to reduce the volume of materials released to the environment, equipment modifications; housekeeping measures, and in-process recycling that returns waste materials directly to production as raw materials. Production cutbacks do not qualify as pollution prevention.

(2) The emission reduction efficiency of pollution prevention measures implemented after November 15, 1990 can be used in calculating the actual emissions from an emission point in the debit and credit equations in paragraphs (g) and (h) of this section.

(i) For pollution prevention measures, the percentage of reduction used in the equations in paragraphs (g)(2) and (g)(3) of this section and paragraphs (h)(2) through (h)(4) of this section is the difference in percentage between the monthly organic HAP emissions for each emission point after the pollution prevention measure for the most recent month versus monthly emissions from the same emission point before the pollution prevention measure, adjusted by the volume of product produced during the two monthly periods.

(ii) The following equation shall be used to calculate the percentage of reduction of a pollution prevention measure for each emission point.

$$\text{Percent reduction} = \frac{E_B (E_{pp} \times P_B)}{P_{pp} E_B} \times 100\%$$

Where:

Percent reduction=Efficiency of pollution prevention measure (percentage of organic HAP reduction).

$E_B$ =Monthly emissions before the pollution prevention measure, megagrams per month, determined as specified in paragraphs (j)(2)(ii)(A), (j)(2)(ii)(B), and (j)(2)(ii)(C) of this section.

$E_{pp}$ =Monthly emissions after the pollution prevention measure, megagrams per month, as determined for the most recent month, determined as specified in paragraphs (j)(2)(ii)(D) or (j)(2)(ii)(E) of this section.

$P_B$ =Monthly production before the pollution prevention measure,

megagrams per month, during the same period over which  $E_B$  is calculated.

$P_{pp}$ =Monthly production after the pollution prevention measure, megagrams per month, as determined for the most recent month.

(A) The monthly emissions before the pollution prevention measure,  $E_B$ , shall be determined in a manner consistent with the equations and procedures in paragraphs (g)(2), (g)(3), (g)(4), and (g)(5) of this section for miscellaneous process vents, storage vessels, gasoline loading racks, and marine tank vessels.

(B) For wastewater,  $E_B$  shall be calculated as follows:

$$E_B = \sum_{i=1}^n \left[ (6.0 \times 10^{-8}) Q_{Bi} H_{Bi} \sum_{m=1}^s Fe_m HAP_{Bim} \right]$$

where:

$n$ =Number of wastewater streams.

$Q_{Bi}$ =Average flow rate for wastewater stream  $i$  before the pollution prevention measure, liters per minute.

$H_{Bi}$ =Number of hours per month that wastewater stream  $i$  was discharged before the pollution prevention measure, hours per month.

$s$ =Total number of organic HAP's in wastewater stream  $i$ .

$Fe_m$ =Fraction emitted of organic HAP  $m$  in wastewater from table 7 of this subpart, dimensionless.

$HAP_{Bim}$ =Average concentration of organic HAP  $m$  in wastewater stream  $i$ , defined and determined according to paragraph (h)(6)(ii)(A)(2) of this section, before the pollution prevention measure, parts per million by weight, as measured before the

implementation of the pollution measure.

(C) If the pollution prevention measure was implemented prior to July 14, 1994, records may be used to determine  $E_B$ .

(D) The monthly emissions after the pollution prevention measure,  $E_{pp}$ , may be determined during a performance test or by a design evaluation and documented engineering calculations. Once an emissions-to-production ratio has been established, the ratio can be used to estimate monthly emissions from monthly production records.

(E) For wastewater,  $E_{pp}$  shall be calculated using the following equation:

$$E_{pp} = \sum_{i=1}^n \left[ \left( 6.0 * 10^{-8} \right) Q_{ppi} H_{ppi} \sum_{m=1}^s Fe_m HAP_{ppim} \right]$$

where n, Q, H, s, Fe<sub>m</sub>, and HAP are defined and determined as described in paragraph (j)(2)(ii)(B) of this section except that Q<sub>ppi</sub>, H<sub>ppi</sub>, and HAP<sub>ppim</sub> shall be determined after the pollution prevention measure has been implemented.

(iii) All equations, calculations, test procedures, test results, and other information used to determine the percentage of reduction achieved by a pollution prevention measure for each emission point shall be fully documented.

(iv) The same pollution prevention measure may reduce emissions from multiple emission points. In such cases, the percentage of reduction in emissions for each emission point must be calculated.

(v) For the purposes of the equations in paragraphs (h)(2) through (h)(6) of this section used to calculate credits for emission points controlled more stringently than the reference control technology, the nominal efficiency of a pollution prevention measure is equivalent to the percentage of reduction of the pollution prevention measure. When a pollution prevention measure is used, the owner or operator of a source is not required to apply to the Administrator for a nominal efficiency and is not subject to paragraph (i) of this section.

(k) The owner or operator shall demonstrate that the emissions from the emission points proposed to be included in the average will not result in greater hazard or, at the option of the State or local permitting authority, greater risk to human health or the environment than if the emission points were controlled according to the provisions in §§ 63.643 through 63.647, and §§ 63.650 and 63.651.

(1) This demonstration of hazard or risk equivalency shall be made to the satisfaction of the State or local permitting authority.

(i) The State or local permitting authority may require owners and operators to use specific methodologies and

procedures for making a hazard or risk determination.

(ii) The demonstration and approval of hazard or risk equivalency may be made according to any guidance that the EPA makes available for use.

(2) Owners and operators shall provide documentation demonstrating the hazard or risk equivalency of their proposed emissions average in their Implementation Plan.

(3) An emissions averaging plan that does not demonstrate an equivalent or lower hazard or risk to the satisfaction of the State or local permitting authority shall not be approved. The State or local permitting authority may require such adjustments to the emissions averaging plan as are necessary in order to ensure that the average will not result in greater hazard or risk to human health or the environment than would result if the emission points were controlled according to §§ 63.643 through 63.647, and §§ 63.650 and 63.651.

(4) A hazard or risk equivalency demonstration shall:

(i) Be a quantitative, bona fide chemical hazard or risk assessment;

(ii) Account for differences in chemical hazard or risk to human health or the environment; and

(iii) Meet any requirements set by the State or local permitting authority for such demonstrations.

(l) For periods of excess emissions, an owner or operator may request that the provisions of paragraphs (l)(1) through (l)(4) of this section be followed instead of the procedures in paragraphs (f)(3)(i) and (f)(3)(ii) of this section.

(1) The owner or operator shall notify the Administrator of excess emissions in the Periodic Reports as required in § 63.654(g)(6).

(2) The owner or operator shall demonstrate that other types of monitoring data or engineering calculations are appropriate to establish that the control device for the emission point

was operating in such a fashion to warrant assigning full or partial credits and debits. This demonstration shall be made to the Administrator's satisfaction, and the Administrator may establish procedures for demonstrating compliance that are acceptable.

(3) The owner or operator shall provide documentation of the period of excess emissions and the other type of monitoring data or engineering calculations to be used to demonstrate that the control device for the emission point was operating in such a fashion to warrant assigning full or partial credits and debits.

(4) The Administrator may assign full or partial credit and debits upon review of the information provided.

[60 FR 43260, Aug. 18, 1995; 60 FR 49976, Sept. 27, 1995; 61 FR 7051, Feb. 23, 1996, as amended at 61 FR 29881, June 12, 1996; 61 FR 33799, June 28, 1996]

**§ 63.653 Monitoring, recordkeeping, and implementation plan for emission averaging.**

(a) For each emission point included in an emissions average, the owner or operator shall perform testing, monitoring, recordkeeping, and reporting equivalent to that required for Group 1 emission points complying with §§ 63.643 through 63.647, and §§ 63.650 and 63.651. The specific requirements for miscellaneous process vents, storage vessels, wastewater, gasoline loading racks, and marine tank vessels are identified in paragraphs (a)(1) through (a)(7) of this section.

(1) The source shall implement the following testing, monitoring, recordkeeping, and reporting procedures for each miscellaneous process vent equipped with a flare, incinerator, boiler, or process heater:

(i) Conduct initial performance tests to determine the percentage of reduction as specified in § 63.645 of this subpart and § 63.116 of subpart G; and

(ii) Monitor the operating parameters specified in § 63.644, as appropriate for the specific control device.

(2) The source shall implement the following procedures for each miscellaneous process vent, equipped with a carbon adsorber, absorber, or condenser but not equipped with a control device:

(i) Determine the flow rate and organic HAP concentration using the methods specified in § 63.115 (a)(1) and (a)(2), § 63.115 (b)(1) and (b)(2), and § 63.115(c)(3) of subpart G; and

(ii) Monitor the operating parameters specified in § 63.114 of subpart G, as appropriate for the specific recovery device.

(3) The source shall implement the following procedures for each storage vessel controlled with an internal floating roof, external roof, or a closed vent system with a control device, as appropriate to the control technique:

(i) Perform the monitoring or inspection procedures in § 63.646 of this subpart and § 63.120 of subpart G; and

(ii) For closed vent systems with control devices, conduct an initial design evaluation as specified in § 63.646 of this subpart and § 63.120(d) of subpart G.

(4) For each gasoline loading rack that is controlled, perform the testing and monitoring procedures specified in §§ 63.425 and 63.427 of subpart R of this part except § 63.425(d) or § 63.427(c).

(5) For each marine tank vessel that is controlled, perform the compliance, monitoring, and performance testing, procedures specified in §§ 63.563, 63.564, and 63.565 of subpart Y of this part.

(6) The source shall implement the following procedures for wastewater emission points, as appropriate to the control techniques:

(i) For wastewater treatment processes, conduct tests as specified in § 61.355 of subpart FF of part 60;

(ii) Conduct inspections and monitoring as specified in §§ 61.343 through 61.349 and § 61.354 of 40 CFR part 61, subpart FF.

(7) If an emission point in an emissions average is controlled using a pollution prevention measure or a device or technique for which no monitoring parameters or inspection procedures are specified in §§ 63.643 through 63.647 and §§ 63.650 and 63.651, the owner or operator shall establish a site-specific monitoring parameter and shall submit the information specified in § 63.654(h)(4) in the Implementation Plan.

(b) Records of all information required to calculate emission debits and credits and records required by § 63.654 shall be retained for 5 years.

(c) Notifications of Compliance Status report, Periodic Reports, and other reports shall be submitted as required by § 63.654.

(d) Each owner or operator of an existing source who elects to comply with § 63.654 (g) and (h) by using emissions averaging for any emission points shall submit an Implementation Plan.

(1) The Implementation Plan shall be submitted no later than 18 months prior to the compliance date in § 63.640(h). This information may be submitted in an operating permit application, in an amendment to an operating permit application, in a separate submittal, or in any combination of the three. If an owner or operator submits the information specified in paragraph (d)(2) of this section at different times, and/or in different submittals, later submittals may refer to earlier submittals instead of duplicating the previously submitted information.

(2) The Implementation Plan shall include the information specified in paragraphs (d)(2)(i) through (d)(2)(ix) of this section for all points included in the average.

(i) The identification of all emission points in the planned emissions average and notation of whether each emission point is a Group 1 or Group 2 emission point as defined in § 63.641.

(ii) The projected annual emission debits and credits for each emission point and the sum for the emission points involved in the average calculated according to § 63.652. The annual projected credits must be greater than the projected debits, as required under § 63.652(e)(3).

(iii) The specific control technology or pollution prevention measure that will be used for each emission point included in the average and date of application or expected date of application.

(iv) The specific identification of each emission point affected by a pollution prevention measure. To be considered a pollution prevention measure, the criteria in § 63.652(j)(1) must be met. If the same pollution prevention measure reduces or eliminates emissions from multiple emission points in the average, the owner or operator must identify each of these emission points.

(v) A statement that the compliance demonstration, monitoring, inspection,

recordkeeping, and reporting provisions in paragraphs (a), (b), and (c) of this section that are applicable to each emission point in the emissions average will be implemented beginning on the date of compliance.

(vi) Documentation of the information listed in paragraphs (d)(2)(vi)(A) through (d)(2)(vi)(D) of this section for each emission point included in the average.

(A) The values of the parameters used to determine whether each emission point in the emissions average is Group 1 or Group 2.

(B) The estimated values of all parameters needed for input to the emission debit and credit calculations in § 63.652 (g) and (h). These parameter values or, as appropriate, limited ranges for the parameter values, shall be specified in the source's Implementation Plan as enforceable operating conditions. Changes to these parameters must be reported in the next Periodic Report.

(C) The estimated percentage of reduction if a control technology achieving a lower percentage of reduction than the efficiency of the reference control technology, as defined in § 63.641, is or will be applied to the emission point.

(D) The anticipated nominal efficiency if a control technology achieving a greater percentage emission reduction than the efficiency of the reference control technology is or will be applied to the emission point. The procedures in § 63.652(i) shall be followed to apply for a nominal efficiency.

(vii) The information specified in § 63.654(h)(4) for:

(A) Each miscellaneous process vent controlled by a pollution prevention measure or control technique for which monitoring parameters or inspection procedures are not specified in paragraphs (a)(1) or (a)(2) of this section; and

(B) Each storage vessel controlled by a pollution prevention measure or a control technique other than an internal or external floating roof or a closed vent system with a control device.

(viii) Documentation of the information listed in paragraphs (d)(2)(viii)(A) through (d)(2)(viii)(G) of this section

for each process wastewater stream included in the average.

(A) The information used to determine whether the wastewater stream is a Group 1 or Group 2 wastewater stream.

(B) The estimated values of all parameters needed for input to the wastewater emission credit and debit calculations in § 63.652(h)(6).

(C) The estimated percentage of reduction if the wastewater stream is or will be controlled using a treatment process or series of treatment processes that achieves an emission reduction less than or equal to the emission reduction specified in table 7 of this subpart.

(D) The estimated percentage of reduction if a control technology achieving less than or equal to 95 percent emission reduction is or will be applied to the vapor stream(s) vented and collected from the treatment processes.

(E) The estimated percentage of reduction if a pollution prevention measure is or will be applied.

(F) The anticipated nominal efficiency if the owner or operator plans to apply for a nominal efficiency under § 63.652(i). A nominal efficiency shall be applied for if:

(1) A control technology is or will be applied to the wastewater stream and achieves an emission reduction greater than the emission reduction specified in table 7 of this subpart; or

(2) A control technology achieving greater than 95 percent emission reduction is or will be applied to the vapor stream(s) vented and collected from the treatment processes.

(G) For each pollution prevention measure, treatment process, or control device used to reduce air emissions of organic HAP's from wastewater and for which no monitoring parameters or inspection procedures are specified in § 63.647, the information specified in § 63.654(h)(4) shall be included in the Implementation Plan.

(ix) Documentation required in § 63.652(k) demonstrating the hazard or risk equivalency of the proposed emissions average.

(3) The Administrator shall determine within 120 calendar days whether the Implementation Plan submitted presents sufficient information. The

Administrator shall either approve the Implementation Plan, request changes, or request that the owner or operator submit additional information. Once the Administrator receives sufficient information, the Administrator shall approve, disapprove, or request changes to the plan within 120 calendar days.

[60 FR 43260, Aug. 18, 1995, as amended at 61 FR 29881, June 12, 1996]

#### **§ 63.654 Reporting and recordkeeping requirements.**

(a) Each owner or operator subject to the wastewater provisions in § 63.647 shall comply with the recordkeeping and reporting provisions in §§ 61.356 and 61.357 of 40 CFR part 61 subpart FF. There are no additional reporting and recordkeeping requirements for wastewater under this subpart unless a wastewater stream is included in an emissions average. Recordkeeping and reporting for emissions averages are specified in § 63.653 and in paragraphs (f)(5) and (g)(8) of this section.

(b) Each owner or operator subject to the gasoline loading rack provisions in § 63.650 shall comply with the recordkeeping and reporting provisions in § 63.428 (b) and (c), (g)(1), and (h)(1) through (h)(3) of subpart R of this part. These requirements are summarized in table 4 of this subpart. There are no additional reporting and recordkeeping requirements for gasoline loading racks under this subpart unless a loading rack is included in an emissions average. Recordkeeping and reporting for emissions averages are specified in § 63.653 and in paragraphs (f)(5) and (g)(8) of this section.

(c) Each owner or operator subject to the marine tank vessel loading operation standards in § 63.651 shall comply with the recordkeeping and reporting provisions in §§ 63.566 and 63.567(a) and § 63.567 (c) through (i) of subpart Y of this part. These requirements are summarized in table 5 of this subpart. There are no additional reporting and recordkeeping requirements for marine tank vessel loading operations under this subpart unless marine tank vessel loading operations are included in an emissions average. Recordkeeping and reporting for emissions averages are specified in § 63.653 and in paragraphs (f)(5) and (g)(8) of this section.

(d) Each owner or operator subject to the equipment leaks standards in § 63.648 shall comply with the record-keeping and reporting provisions in paragraphs (d)(1) through (d)(6) of this section.

(1) Sections 60.486 and 60.487 of subpart VV of part 60, or §§ 63.181 and 63.182 of subpart H of this part except for § 63.182, paragraphs (b), (c)(2), and (c)(4).

(2) The Notification of Compliance Status report required by § 63.182(c) of subpart H and the initial semiannual report required by § 60.487(b) of 40 CFR part 60, subpart VV shall be submitted within 150 days of the compliance date specified in § 63.640(h); the requirements of subpart H of this part are summarized in table 3 of this subpart.

(3) An owner or operator who determines that a compressor qualifies for the hydrogen service exemption in § 63.648 shall also keep a record of the demonstration required by § 63.648.

(4) An owner or operator must keep a list of identification numbers for valves that are designated as leakless per § 63.648(c)(10).

(5) An owner or operator must identify, either by list or location (area or refining process unit), equipment in organic HAP service less than 300 hours per year within refining process units subject to this subpart.

(6) An owner or operator must keep a list of reciprocating pumps and compressors determined to be exempt from seal requirements as per §§ 63.648 (f) and (i).

(e) Each owner or operator of a source subject to this subpart shall submit the reports listed in paragraphs (e)(1) through (e)(3) of this section except as provided in paragraph (h)(5) of this section, and shall keep records as described in paragraph (i) of this section.

(1) A Notification of Compliance Status report as described in paragraph (f) of this section;

(2) Periodic Reports as described in paragraph (g) of this section; and

(3) Other reports as described in paragraph (h) of this section.

(f) Each owner or operator of a source subject to this subpart shall submit a Notification of Compliance Status report within 150 days after the compliance dates specified in § 63.640(h). This

information may be submitted in an operating permit application, in an amendment to an operating permit application, in a separate submittal, or in any combination of the three. If the required information has been submitted before the date 150 days after the compliance date specified in § 63.640(h), a separate Notification of Compliance Status report is not required within 150 days after the compliance dates specified in § 63.640(h). If an owner or operator submits the information specified in paragraphs (f)(1) through (f)(5) of this section at different times, and/or in different submittals, later submittals may refer to earlier submittals instead of duplicating and resubmitting the previously submitted information.

(1) The Notification of Compliance Status report shall include the information specified in paragraphs (f)(1)(i) through (f)(1)(v) of this section.

(i) For storage vessels, this report shall include the information specified in paragraphs (f)(1)(i)(A) through (f)(1)(i)(D) of this section.

(A) Identification of each storage vessel subject to this subpart, whether the vessel is Group 1 or Group 2, and the method of compliance for each Group 1 storage vessel that is not included in an emissions average (i.e., internal floating roof, external floating roof, or closed-vent system and control device).

(B) If a closed vent system and a control device other than a flare is used to comply with § 63.646 the owner or operator shall submit:

(1) A description of the parameter or parameters to be monitored to ensure that the control device is being properly operated and maintained, an explanation of the criteria used for selection of that parameter (or parameters), and the frequency with which monitoring will be performed; and either

(2) The design evaluation documentation specified in § 63.120(d)(1)(i) of subpart G, if the owner or operator elects to prepare a design evaluation; or

(3) If the owner or operator elects to submit the results of a performance test, identification of the storage vessel and control device for which the performance test will be submitted, and identification of the emission point(s) that share the control device

with the storage vessel and for which the performance test will be conducted.

(C) If a closed vent system and control device other than a flare is used, the owner or operator shall submit:

(1) The operating range for each monitoring parameter. The specified operating range shall represent the conditions for which the control device is being properly operated and maintained.

(2) If a performance test is conducted instead of a design evaluation, results of the performance test demonstrating that the control device achieves greater than or equal to the required control efficiency. A performance test conducted prior to the compliance date of this subpart can be used to comply with this requirement, provided that the test was conducted using EPA methods and that the test conditions are representative of current operating practices.

(D) If a closed vent system and a flare is used, the owner or operator shall submit:

(1) Flare design (e.g., steam-assisted, air-assisted, or nonassisted);

(2) All visible emission readings, heat content determinations, flow rate measurements, and exit velocity determinations made during the compliance determination required by § 63.120(e) of subpart G of this part; and

(3) All periods during the compliance determination when the pilot flame is absent.

(ii) For miscellaneous process vents, identification of each miscellaneous process vent subject to this subpart, whether the process vent is Group 1 or Group 2, and the method of compliance for each Group 1 miscellaneous process vent that is not included in an emissions average (e.g., use of a flare or other control device meeting the requirements of § 63.643(a)).

(iii) For miscellaneous process vents controlled by control devices required to be tested under § 63.645 of this subpart and § 63.116(c) of subpart G of this part, performance test results including the information in paragraphs (f)(1)(iii)(A) and (B) of this section. Results of a performance test conducted prior to the compliance date of this subpart can be used provided that the test was conducted using the methods

specified in § 63.645 and that the test conditions are representative of current operating conditions.

(A) The percentage of reduction of organic HAP's or TOC, or the outlet concentration of organic HAP's or TOC (parts per million by volume on a dry basis corrected to 3 percent oxygen), determined as specified in § 63.116(c) of subpart G of this part; and

(B) The value of the monitored parameters specified in table 10 of this subpart, or a site-specific parameter approved by the permitting authority, averaged over the full period of the performance test.

(iv) For miscellaneous process vents controlled by flares, performance test results including the information in paragraphs (f)(1)(iv)(A) and (B) of this section;

(A) All visible emission readings, heat content determinations, flow rate measurements, and exit velocity determinations made during the compliance determination required by § 63.645 of this subpart and § 63.116(a) of subpart G of this part, and

(B) A statement of whether a flame was present at the pilot light over the full period of the compliance determination.

(v) For equipment leaks complying with § 63.648(c) (i.e., complying with the requirements of subpart H of this part), the Notification of Compliance Report Status report information required by § 63.182(c) of subpart H and whether the percentage of leaking valves will be reported on a process unit basis or a sourcewide basis.

(2) If initial performance tests are required by §§ 63.643 through 63.653 of this subpart, the Notification of Compliance Status report shall include one complete test report for each test method used for a particular source.

(i) For additional tests performed using the same method, the results specified in paragraph (f)(1) of this section shall be submitted, but a complete test report is not required.

(ii) A complete test report shall include a sampling site description, description of sampling and analysis procedures and any modifications to standard procedures, quality assurance

procedures, record of operating conditions during the test, record of preparation of standards, record of calibrations, raw data sheets for field sampling, raw data sheets for field and laboratory analyses, documentation of calculations, and any other information required by the test method.

(iii) Performance tests are required only if specified by §§63.643 through 63.653 of this subpart. Initial performance tests are required for some kinds of emission points and controls. Periodic testing of the same emission point is not required.

(3) For each monitored parameter for which a range is required to be established under §63.120(d) of subpart G of this part for storage vessels or §63.644 for miscellaneous process vents, the Notification of Compliance Status report shall include the information in paragraphs (f)(3)(i) through (f)(3)(iii) of this section.

(i) The specific range of the monitored parameter(s) for each emission point;

(ii) The rationale for the specific range for each parameter for each emission point, including any data and calculations used to develop the range and a description of why the range ensures compliance with the emission standard.

(A) If a performance test is required by this subpart for a control device, the range shall be based on the parameter values measured during the performance test supplemented by engineering assessments and manufacturer's recommendations. Performance testing is not required to be conducted over the entire range of permitted parameter values.

(B) If a performance test is not required by this subpart for a control device, the range may be based solely on engineering assessments and manufacturers' recommendations.

(iii) A definition of the source's operating day for purposes of determining daily average values of monitored parameters. The definition shall specify the times at which an operating day begins and ends.

(4) Results of any continuous monitoring system performance evaluations shall be included in the Notification of Compliance Status report.

(5) For emission points included in an emissions average, the Notification of Compliance Status report shall include the values of the parameters needed for input to the emission credit and debit equations in §63.652(g) and (h), calculated or measured according to the procedures in §63.652(g) and (h), and the resulting credits and debits for the first quarter of the year. The first quarter begins on the compliance date specified in §63.640.

(g) The owner or operator of a source subject to this subpart shall submit Periodic Reports no later than 60 days after the end of each 6-month period when any of the compliance exceptions specified in paragraphs (g)(1) through (g)(6) of this section occur. The first 6-month period shall begin on the date the Notification of Compliance Status report is required to be submitted. A Periodic Report is not required if none of the compliance exceptions specified in paragraphs (g)(1) through (g)(6) of this section occurred during the 6-month period unless emissions averaging is utilized. Quarterly reports must be submitted for emission points included in emissions averages, as provided in paragraph (g)(8) of this section. An owner or operator may submit reports required by other regulations in place of or as part of the Periodic Report required by this paragraph if the reports contain the information required by paragraphs (g)(1) through (g)(8) of this section.

(1) For storage vessels, Periodic Reports shall include the information specified for Periodic Reports in paragraph (g)(2) through (g)(5) of this section except that information related to gaskets, slotted membranes, and sleeve seals is not required for storage vessels that are part of an existing source.

(2) An owner or operator who elects to comply with §63.646 by using a fixed roof and an internal floating roof or by using an external floating roof converted to an internal floating roof shall submit the results of each inspection conducted in accordance with §63.120(a) of subpart G of this part in which a failure is detected in the control equipment.

(i) For vessels for which annual inspections are required under §63.120(a)(2)(i) or (a)(3)(ii) of subpart G

of this part, the specifications and requirements listed in paragraphs (g)(2)(i)(A) through (g)(2)(i)(C) of this section apply.

(A) A failure is defined as any time in which the internal floating roof is not resting on the surface of the liquid inside the storage vessel and is not resting on the leg supports; or there is liquid on the floating roof; or the seal is detached from the internal floating roof; or there are holes, tears, or other openings in the seal or seal fabric; or there are visible gaps between the seal and the wall of the storage vessel.

(B) Except as provided in paragraph (g)(2)(i)(C) of this section, each Periodic Report shall include the date of the inspection, identification of each storage vessel in which a failure was detected, and a description of the failure. The Periodic Report shall also describe the nature of and date the repair was made or the date the storage vessel was emptied.

(C) If an extension is utilized in accordance with § 63.120(a)(4) of subpart G of this part, the owner or operator shall, in the next Periodic Report, identify the vessel; include the documentation specified in § 63.120(a)(4) of subpart G of this part; and describe the date the storage vessel was emptied and the nature of and date the repair was made.

(ii) For vessels for which inspections are required under § 63.120(a)(2)(ii), (a)(3)(i), or (a)(3)(iii) of subpart G of this part (i.e., internal inspections), the specifications and requirements listed in paragraphs (g)(2)(ii)(A) and (g)(2)(ii)(B) of this section apply.

(A) A failure is defined as any time in which the internal floating roof has defects; or the primary seal has holes, tears, or other openings in the seal or the seal fabric; or the secondary seal (if one has been installed) has holes, tears, or other openings in the seal or the seal fabric; or, for a storage vessel that is part of a new source, the gaskets no longer close off the liquid surface from the atmosphere; or, for a storage vessel that is part of a new source, the slotted membrane has more than a 10 percent open area.

(B) Each Periodic Report shall include the date of the inspection, identification of each storage vessel in which

a failure was detected, and a description of the failure. The Periodic Report shall also describe the nature of and date the repair was made.

(3) An owner or operator who elects to comply with § 63.646 by using an external floating roof shall meet the periodic reporting requirements specified in paragraphs (g)(3)(i) through (g)(3)(iii) of this section.

(i) The owner or operator shall submit, as part of the Periodic Report, documentation of the results of each seal gap measurement made in accordance with § 63.120(b) of subpart G of this part in which the seal and seal gap requirements of § 63.120(b)(3), (b)(4), (b)(5), or (b)(6) of subpart G of this part are not met. This documentation shall include the information specified in paragraphs (g)(3)(i)(A) through (g)(3)(i)(D) of this section.

(A) The date of the seal gap measurement.

(B) The raw data obtained in the seal gap measurement and the calculations described in § 63.120(b)(3) and (b)(4) of subpart G of this part.

(C) A description of any seal condition specified in § 63.120(b)(5) or (b)(6) of subpart G of this part that is not met.

(D) A description of the nature of and date the repair was made, or the date the storage vessel was emptied.

(ii) If an extension is utilized in accordance with § 63.120(b)(7)(ii) or (b)(8) of subpart G of this part, the owner or operator shall, in the next Periodic Report, identify the vessel; include the documentation specified in § 63.120(b)(7)(ii) or (b)(8) of subpart G of this part, as applicable; and describe the date the vessel was emptied and the nature of and date the repair was made.

(iii) The owner or operator shall submit, as part of the Periodic Report, documentation of any failures that are identified during visual inspections required by § 63.120(b)(10) of subpart G of this part. This documentation shall meet the specifications and requirements in paragraphs (g)(3)(iii)(A) and (g)(3)(iii)(B) of this section.

(A) A failure is defined as any time in which the external floating roof has defects; or the primary seal has holes or other openings in the seal or the seal fabric; or the secondary seal has holes,

tears, or other openings in the seal or the seal fabric; or, for a storage vessel that is part of a new source, the gaskets no longer close off the liquid surface from the atmosphere; or, for a storage vessel that is part of a new source, the slotted membrane has more than 10 percent open area.

(B) Each Periodic Report shall include the date of the inspection, identification of each storage vessel in which a failure was detected, and a description of the failure. The Periodic Report shall also describe the nature of and date the repair was made.

(4) An owner or operator who elects to comply with §63.646 by using an external floating roof converted to an internal floating roof shall comply with the periodic reporting requirements of paragraph (g)(2) of this section.

(5) An owner or operator who elects to comply with §63.646 by installing a closed vent system and control device shall submit, as part of the next Periodic Report, the information specified in paragraphs (g)(5)(i) through (g)(5)(iii) of this section.

(i) The Periodic Report shall include the information specified in paragraphs (g)(5)(i)(A) and (g)(5)(i)(B) of this section for those planned routine maintenance operations that would require the control device not to meet the requirements of §63.119(e)(1) or (e)(2) of subpart G of this part, as applicable.

(A) A description of the planned routine maintenance that is anticipated to be performed for the control device during the next 6 months. This description shall include the type of maintenance necessary, planned frequency of maintenance, and lengths of maintenance periods.

(B) A description of the planned routine maintenance that was performed for the control device during the previous 6 months. This description shall include the type of maintenance performed and the total number of hours during those 6 months that the control device did not meet the requirements of §63.119 (e)(1) or (e)(2) of subpart G of this part, as applicable, due to planned routine maintenance.

(ii) If a control device other than a flare is used, the Periodic Report shall describe each occurrence when the monitored parameters were outside of

the parameter ranges documented in the Notification of Compliance Status report. The description shall include: Identification of the control device for which the measured parameters were outside of the established ranges, and causes for the measured parameters to be outside of the established ranges.

(iii) If a flare is used, the Periodic Report shall describe each occurrence when the flare does not meet the general control device requirements specified in §63.11(b) of subpart A of this part and shall include: Identification of the flare that does not meet the general requirements specified in §63.11(b) of subpart A of this part, and reasons the flare did not meet the general requirements specified in §63.11(b) of subpart A of this part.

(6) For miscellaneous process vents for which continuous parameter monitors are required by this subpart, periods of excess emissions shall be identified in the Periodic Reports and shall be used to determine compliance with the emission standards.

(i) Period of excess emission means any of the following conditions:

(A) An operating day when the daily average value of a monitored parameter, except presence of a flare pilot flame, is outside the range specified in the Notification of Compliance Status report. Monitoring data recorded during periods of monitoring system breakdown, repairs, calibration checks and zero (low-level) and high-level adjustments shall not be used in computing daily average values of monitored parameters.

(B) An operating day when all pilot flames of a flare are absent.

(C) An operating day when monitoring data required to be recorded in paragraphs (i)(3) (i) and (ii) of this section are available for less than 75 percent of the operating hours.

(D) For data compression systems approved under paragraph (h)(5)(iii) of this section, an operating day when the monitor operated for less than 75 percent of the operating hours or a day when less than 18 monitoring values were recorded.

(ii) For miscellaneous process vents, excess emissions shall be reported for the operating parameters specified in table 10 of this subpart unless other

site-specific parameter(s) have been approved by the operating permit authority.

(iii) Periods of startup and shutdown that meet the definition of § 63.641, and malfunction that meet the definition in § 63.2 and periods of performance testing and monitoring system calibration shall not be considered periods of excess emissions. Malfunctions may include process unit, control device, or monitoring system malfunctions.

(7) If a performance test for determination of compliance for a new emission point subject to this subpart or for an emission point that has changed from Group 2 to Group 1 is conducted during the period covered by a Periodic Report, the results of the performance test shall be included in the Periodic Report.

(i) Results of the performance test shall include the percentage of emissions reduction or outlet pollutant concentration reduction (whichever is needed to determine compliance) and the values of the monitored operating parameters.

(ii) The complete test report shall be maintained onsite.

(8) The owner or operator of a source shall submit quarterly reports for all emission points included in an emissions average.

(i) The quarterly reports shall be submitted no later than 60 calendar days after the end of each quarter. The first report shall be submitted with the Notification of Compliance Status report no later than 150 days after the compliance date specified in § 63.640.

(ii) The quarterly reports shall include:

(A) The information specified in this paragraph and in paragraphs (g)(2) through (g)(7) of this section for all storage vessels and miscellaneous process vents included in an emissions average;

(B) The information required to be reported by § 63.428 (h)(1), (h)(2), and (h)(3) for each gasoline loading rack included in an emissions average, unless this information has already been submitted in a separate report;

(C) The information required to be included in quarterly reports by §§ 63.567(f) and 63.567(i)(2) of subpart Y of this part for each marine tank vessel

loading operation included in an emissions average, unless the information has already been submitted in a separate report;

(D) Any information pertaining to each wastewater stream included in an emissions average that the source is required to report under the Implementation Plan for the source;

(E) The credits and debits calculated each month during the quarter;

(F) A demonstration that debits calculated for the quarter are not more than 1.30 times the credits calculated for the quarter, as required under §§ 63.652(e)(4);

(G) The values of any inputs to the credit and debit equations in § 63.652 (g) and (h) that change from month to month during the quarter or that have changed since the previous quarter; and

(H) Any other information the source is required to report under the Implementation Plan for the source.

(iii) Every fourth quarterly report shall include the following:

(A) A demonstration that annual credits are greater than or equal to annual debits as required by § 63.652(e)(3); and

(B) A certification of compliance with all the emissions averaging provisions in § 63.652 of this subpart.

(h) Other reports shall be submitted as specified in subpart A of this part and as follows:

(1) Reports of startup, shutdown, and malfunction required by § 63.10(d)(5). Records and reports of startup, shutdown, and malfunction are not required if they pertain solely to Group 2 emission points, as defined in § 63.641, that are not included in an emissions average. For purposes of this paragraph, startup and shutdown shall have the meaning defined in § 63.641, and malfunction shall have the meaning defined in § 63.2; and

(2) For storage vessels, notifications of inspections as specified in paragraphs (h)(2)(i) and (h)(2)(ii) of this section;

(i) In order to afford the Administrator the opportunity to have an observer present, the owner or operator shall notify the Administrator of the refilling of each Group 1 storage vessel that has been emptied and degassed.

(A) Except as provided in paragraphs (h)(2)(i)(B) and (C) of this section, the owner or operator shall notify the Administrator in writing at least 30 calendar days prior to filling or refilling of each storage vessel with organic HAP's to afford the Administrator the opportunity to inspect the storage vessel prior to refilling.

(B) Except as provided in paragraph (h)(2)(i)(C) of this section, if the internal inspection required by §§ 63.120(a)(2), 63.120(a)(3), or 63.120(b)(10) of subpart G of this part is not planned and the owner or operator could not have known about the inspection 30 calendar days in advance of refilling the vessel with organic HAP's, the owner or operator shall notify the Administrator at least 7 calendar days prior to refilling of the storage vessel. Notification may be made by telephone and immediately followed by written documentation demonstrating why the inspection was unplanned. This notification, including the written documentation, may also be made in writing and sent so that it is received by the Administrator at least 7 calendar days prior to the refilling.

(C) The State or local permitting authority can waive the notification requirements of paragraphs (h)(2)(i)(A) and/or (h)(2)(i)(B) of this section for all or some storage vessels at petroleum refineries subject to this subpart. The State or local permitting authority may also grant permission to refill storage vessels sooner than 30 days after submitting the notification required by paragraph (h)(2)(i)(A) of this section, or sooner than 7 days after submitting the notification required by paragraph (h)(2)(i)(B) of this section for all storage vessels, or for individual storage vessels on a case-by-case basis.

(ii) In order to afford the Administrator the opportunity to have an observer present, the owner or operator of a storage vessel equipped with an external floating roof shall notify the Administrator of any seal gap measurements. The notification shall be made in writing at least 30 calendar days in advance of any gap measurements required by § 63.120 (b)(1) or (b)(2) of subpart G of this part. The State or local permitting authority can waive this notification requirement for all or

some storage vessels subject to the rule or can allow less than 30 calendar days' notice.

(3) For owners or operators of sources required to request approval for a nominal control efficiency for use in calculating credits for an emissions average, the information specified in § 63.652(h).

(4) The owner or operator who requests approval to monitor a different parameter than those listed in § 63.644 for miscellaneous process vents or who is required by § 63.653(a)(8) to establish a site-specific monitoring parameter for a point in an emissions average shall submit the information specified in paragraphs (h)(4)(i) through (h)(4)(iii) of this section. For new or reconstructed sources, the information shall be submitted with the application for approval of construction or reconstruction required by § 63.5(d) of subpart A and for existing sources, and the information shall be submitted no later than 18 months prior to the compliance date. The information may be submitted in an operating permit application, in an amendment to an operating permit application, or in a separate submittal.

(i) A description of the parameter(s) to be monitored to determine whether excess emissions occur and an explanation of the criteria used to select the parameter(s).

(ii) A description of the methods and procedures that will be used to demonstrate that the parameter can be used to determine excess emissions and the schedule for this demonstration. The owner or operator must certify that they will establish a range for the monitored parameter as part of the Notification of Compliance Status report required in paragraphs (e) and (f) of this section.

(iii) The frequency and content of monitoring, recording, and reporting if: monitoring and recording are not continuous; or if periods of excess emissions, as defined in paragraph (g)(6) of this section, will not be identified in Periodic Reports required under paragraphs (e) and (g) of this section. The rationale for the proposed monitoring, recording, and reporting system shall be included.

(5) An owner or operator may request approval to use alternatives to the continuous operating parameter monitoring and recordkeeping provisions listed in paragraph (i) of this section.

(i) Requests shall be submitted with the Application for Approval of Construction or Reconstruction for new sources and no later than 18 months prior to the compliance date for existing sources. The information may be submitted in an operating permit application, in an amendment to an operating permit application, or in a separate submittal. Requests shall contain the information specified in paragraphs (h)(5)(iii) through (h)(5)(iv) of this section, as applicable.

(ii) The provisions in § 63.8(f)(5)(i) of subpart A of this part shall govern the review and approval of requests.

(iii) An owner or operator may request approval to use an automated data compression recording system that does not record monitored operating parameter values at a set frequency (for example, once every hour) but records all values that meet set criteria for variation from previously recorded values.

(A) The requested system shall be designed to:

(1) Measure the operating parameter value at least once every hour.

(2) Record at least 24 values each day during periods of operation.

(3) Record the date and time when monitors are turned off or on.

(4) Recognize unchanging data that may indicate the monitor is not functioning properly, alert the operator, and record the incident.

(5) Compute daily average values of the monitored operating parameter based on recorded data.

(B) The request shall contain a description of the monitoring system and data compression recording system including the criteria used to determine which monitored values are recorded and retained, the method for calculating daily averages, and a demonstration that the system meets all criteria of paragraph (h)(5)(iii)(A) of this section.

(iv) An owner or operator may request approval to use other alternative monitoring systems according to the

procedures specified in § 63.8(f) of subpart A of this part.

(6) The owner or operator shall submit the information specified in paragraphs (h)(6)(i) through (h)(6)(iii) of this section, as applicable. For existing sources, this information shall be submitted no later than 18 months prior to the compliance date. For a new source, the information shall be submitted with the application for approval of construction or reconstruction required by § 63.5(d) of subpart A of this part. The information may be submitted in an operating permit application, in an amendment to an operating permit application, or in a separate submittal.

(i) The determination of applicability of this subpart to petroleum refining process units that are designed and operated as flexible operation units.

(ii) The determination of applicability of this subpart to any storage vessel for which use varies from year to year.

(iii) The determination of applicability of this subpart to any distillation unit for which use varies from year to year.

(i) *Recordkeeping.* (1) Each owner or operator subject to the storage vessel provisions in § 63.646 shall keep the records specified in § 63.123 of subpart G of this part except as specified in paragraphs (i)(1)(i) through (i)(1)(iv) of this section.

(i) Records related to gaskets, slotted membranes, and sleeve seals are not required for storage vessels within existing sources.

(ii) All references to § 63.122 in § 63.123 of subpart G of this part shall be replaced with § 63.654(e).

(iii) All references to § 63.150 in § 63.123 of subpart G of this part shall be replaced with § 63.652.

(iv) If a storage vessel is determined to be Group 2 because the weight percent total organic HAP of the stored liquid is less than or equal to 4 percent for existing sources or 2 percent for new sources, a record of any data, assumptions, and procedures used to make this determination shall be retained.

(2) Each owner or operator required to report the results of performance tests under paragraphs (f) and (g)(7) of

this section shall retain a record of all reported results as well as a complete test report, as described in paragraph (f)(2)(ii) of this section for each emission point tested.

(3) Each owner or operator required to continuously monitor operating parameters under § 63.644 for miscellaneous process vents or under §§ 63.652 and 63.653 for emission points in an emissions average shall keep the records specified in paragraphs (i)(3)(i) through (i)(3)(v) of this section unless an alternative recordkeeping system has been requested and approved under paragraph (h) of this section.

(i) The monitoring system shall measure data values at least once every hour.

(ii) The owner or operator shall record either:

(A) Each measured data value; or

(B) Block average values for 1 hour or shorter periods calculated from all measured data values during each period. If values are measured more frequently than once per minute, a single value for each minute may be used to calculate the hourly (or shorter period) block average instead of all measured values.

(iii) Daily average values of each continuously monitored parameter shall be calculated for each operating day and retained for 5 years except as specified in paragraph (i)(3)(iv) of this section.

(A) The daily average shall be calculated as the average of all values for a monitored parameter recorded during the operating day. The average shall cover a 24-hour period if operation is continuous, or the number of hours of operation per day if operation is not continuous.

(B) The operating day shall be the period defined in the Notification of Compliance Status report. It may be from midnight to midnight or another daily period.

(iv) If all recorded values for a monitored parameter during an operating day are within the range established in the Notification of Compliance Status report, the owner or operator may record that all values were within the range and retain this record for 5 years rather than calculating and recording a daily average for that day. For these

days, the records required in paragraph (i)(3)(ii) of this section shall also be retained for 5 years.

(v) Monitoring data recorded during periods of monitoring system breakdowns, repairs, calibration checks, and zero (low-level) and high-level adjustments shall not be included in any average computed under this subpart. Records shall be kept of the times and durations of all such periods and any other periods during process or control device operation when monitors are not operating.

(4) All other information required to be reported under paragraphs (a) through (h) of this section shall be retained for 5 years.

[60 FR 43260, Aug. 18, 1995, as amended at 61 FR 29881, June 12, 1996]

### §§ 63.655-63.679 [Reserved]

#### APPENDIX TO SUBPART CC TO PART 63— TABLES

TABLE 1.—HAZARDOUS AIR POLLUTANTS

| Chemical name                                  | CAS No. <sup>a</sup> |
|--|----------------------|
| Benzene .....                                  | 71432                |
| Biphenyl .....                                 | 92524                |
| Butadiene (1,3) .....                          | 10990                |
| Carbon disulfide .....                         | 75150                |
| Carbonyl sulfide .....                         | 463581               |
| Cresol (mixed isomers <sup>b</sup> ) .....     | 1319773              |
| Cresol (m-) .....                              | 108394               |
| Cresol (o-) .....                              | 95487                |
| Cresol (p-) .....                              | 106445               |
| Cumene .....                                   | 98828                |
| Dibromoethane (1,2) (ethylene dibromide) ..... | 106934               |
| Dichloroethane (1,2) .....                     | 107062               |
| Diethanolamine .....                           | 111422               |
| Ethylbenzene .....                             | 100414               |
| Ethylene glycol .....                          | 107211               |
| Hexane .....                                   | 110543               |
| Methanol .....                                 | 67561                |
| Methyl ethyl ketone (2-butanone) .....         | 78933                |
| Methyl isobutyl ketone (hexone) .....          | 108101               |
| Methyl tert butyl ether .....                  | 1634044              |
| Naphthalene .....                              | 91203                |
| Phenol .....                                   | 108952               |
| Toluene .....                                  | 108883               |
| Trimethylpentane (2,2,4) .....                 | 540841               |
| Xylene (mixed isomers <sup>b</sup> ) .....     | 1330207              |
| xylene (m-) .....                              | 108383               |
| xylene (o-) .....                              | 95476                |
| xylene (p-) .....                              | 106423               |

<sup>a</sup>CAS number = Chemical Abstract Service registry number assigned to specific compounds, isomers, or mixtures of compounds.

<sup>b</sup>Isomer means all structural arrangements for the same number of atoms of each element and does not mean salts, esters, or derivatives.

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TABLE 2.—LEAK DEFINITIONS FOR PUMPS AND VALVES

| Standard <sup>a</sup>   | Phase | Leak definition (parts per million) |
|-------------------------|-------|-------------------------------------|
| § 63.163 (pumps) .....  | I     | 10,000                              |
|                         | II    | 5,000                               |
|                         | III   | 2,000                               |
| § 63.168 (valves) ..... | I     | 10,000                              |

TABLE 2.—LEAK DEFINITIONS FOR PUMPS AND VALVES—Continued

| Standard <sup>a</sup>  | Phase | Leak definition (parts per million) |
|------------------------|-------|-------------------------------------|
| § 63.163 (pumps) ..... | II    | 1,000                               |
|                        | III   | 1,000                               |

<sup>a</sup>Subpart H of this part.

TABLE 3.—EQUIPMENT LEAK RECORDKEEPING AND REPORTING REQUIREMENTS FOR SOURCES COMPLYING WITH § 63.648 OF SUBPART CC BY COMPLIANCE WITH SUBPART H OF THIS PART<sup>a</sup>

| Reference (section of subpart H of this part) | Description  | Comment   |
|---|--|---|
| 63.181(a) .....                               | Recordkeeping system requirements .....  | Except for §§ 63.181(b)(2)(iii) and 63.181(b)(9).   |
| 63.181(b) .....                               | Records required for process unit equipment.   | Except for §§ 63.181(b)(2)(iii) and 63.181(b)(9).   |
| 63.181(c) .....                               | Visual inspection documentation .....  | Except for §§ 63.181(b)(2)(iii) and 63.181(b)(9).   |
| 63.181(d) .....                               | Leak detection record requirements .....   | Except for § 63.181(d)(8).  |
| 63.181(e) .....                               | Compliance requirements for pressure tests for batch product process equipment trains. | This subsection does not apply to subpart CC.   |
| 63.181(f) .....                               | Compressor compliance test records.  |   |
| 63.181(g) .....                               | Closed-vent systems and control device record requirements.                            |   |
| 63.181(h) .....                               | Process unit quality improvement program records.                                      |   |
| 63.181(i) .....                               | Heavy liquid service determination record.   |   |
| 63.181(j) .....                               | Equipment identification record.   |   |
| 63.181(k) .....                               | Enclosed-vented process unit emission limitation record requirements.                  |   |
| 63.182(a) .....                               | Reports.   |   |
| 63.182(b) .....                               | Initial notification report requirements.  | Not required.   |
| 63.182(c) .....                               | Notification of compliance status report   | Except in § 63.182(c); change “within 90 days of the compliance dates” to “within 150 days of the compliance dates”; except in §§ 63.182 (c)(2) and (c)(4). |
| 63.182(d) .....                               | Periodic report .....  | Except for §§ 63.182 (d)(2)(vii), (d)(2)(viii), and (d)(3).   |

<sup>a</sup>This table does not include all the requirements delineated under the referenced sections. See referenced sections for specific requirements.

TABLE 4.—GASOLINE DISTRIBUTION EMISSION POINT RECORDKEEPING AND REPORTING REQUIREMENTS<sup>a</sup>

| Reference (section of subpart R of this part) | Description  | Comment   |
|---|--|---|
| 63.428(b) .....                               | Records of test results for each gasoline cargo tank loaded at the facility. |   |
| 63.428(c) .....                               | Continuous monitoring data record-keeping requirements.                      |   |
| 63.428(g)(1) .....                            | Semiannual report loading rack information.                                  | Required to be submitted with the periodic report required under 40 CFR part 63 subpart CC. |
| 63.428 (h)(1) through (h)(3) .....            | Excess emissions report loading rack information.                            | Required to be submitted with the periodic report required under 40 CFR part 63 subpart CC. |

<sup>a</sup>This table does not include all the requirements delineated under the referenced sections. See referenced sections for specific requirements.

TABLE 5.—MARINE VESSEL LOADING AND UNLOADING OPERATIONS RECORDKEEPING AND REPORTING REQUIREMENTS<sup>a</sup>

| Reference (section of subpart Y of this part) | Description   | Comment  |
|---|---|--|
| 63.566(a) .....                               | Performance test/site test plan                             | The information required under this paragraph is to be submitted with the notification of compliance status report required under 40 CFR part 63 subpart CC. |
| 63.566(b) .....                               | Performance test data requirements                          |  |
| 63.567(a) .....                               | General Provisions (subpart A) applicability                |  |
| 63.567(c) .....                               | Vent system valve bypass record-keeping requirements        |  |
| 63.567(d) .....                               | Continuous equipment monitoring record-keeping requirements |  |
| 63.567(e) .....                               | Flare recordkeeping requirements                            |  |
| 63.567(f) .....                               | Quarterly report requirements                               | The information required under this paragraph is to be submitted with the periodic report required under 40 CFR part 63 subpart CC.                          |
| 63.567(g) .....                               | Marine vessel vapor-tightness documentation                 |  |
| 63.567(h) .....                               | Documentation file maintenance                              |  |
| 63.567(i) .....                               | Emission estimation reporting and recordkeeping procedures  |  |

<sup>a</sup> This table does not include all the requirements delineated under the referenced sections. See referenced sections for specific requirements.

TABLE 6.—GENERAL PROVISIONS APPLICABILITY TO SUBPART CC<sup>a</sup>

| Reference                   | Applies to subpart CC | Comment  |
|-----------------------------|-----------------------|--|
| 63.1(a)(1) .....            | Yes                   | Subpart CC (this table) specifies applicability of each paragraph in subpart A to subpart CC.  |
| 63.1(a)(2) .....            | Yes                   |  |
| 63.1(a)(3) .....            | Yes                   |  |
| 63.1(a)(4) .....            | No                    |  |
| 63.1(a)(5)–63.1(a)(9) ..... | No                    | Subpart CC and other cross-referenced subparts specify calendar or operating day.  |
| 63.1(a)(10) .....           | No                    |  |
| 63.1(a)(11) .....           | Yes                   | Subpart CC specifies its own applicability.  |
| 63.1(a)(12) .....           | Yes                   |  |
| 63.1(a)(13) .....           | Yes                   |  |
| 63.1(a)(14) .....           | Yes                   |  |
| 63.1(b)(1) .....            | No                    |  |
| 63.1(b)(2) .....            | Yes                   |  |
| 63.1(b)(3) .....            | No                    |  |
| 63.1(c)(1) .....            | No                    |  |
| 63.1(c)(2) .....            | No                    |  |
| 63.1(c)(3) .....            | No                    |  |
| 63.1(c)(4) .....            | Yes                   | Subpart CC explicitly specifies requirements that apply.<br>Area sources are not subject to subpart CC.  |
| 63.1(c)(5) .....            | Yes                   |  |
| 63.1(d) .....               | No                    |  |
| 63.1(e) .....               | No                    | Except that sources are not required to submit notifications overridden by this table.   |
| 63.2 .....                  | Yes                   |  |
| 63.3 .....                  | No                    | §63.641 of subpart CC specifies that if the same term is defined in subparts A and CC, it shall have the meaning given in subpart CC.<br>Units of measure are spelled out in subpart CC. |
| 63.4(a)(1)–63.4(a)(3) ..... | Yes                   |  |
| 63.4(a)(4) .....            | No                    | Reserved.  |
| 63.4(a)(5) .....            | Yes                   |  |
| 63.4(b) .....               | Yes                   |  |
| 63.4(c) .....               | Yes                   |  |
| 63.5(a)(1) .....            | Yes                   |  |
| 63.5(a)(2) .....            | Yes                   | Except replace term “source” and “stationary source” in §63.5(a)(1) of subpart A with “affected source.”<br><br>Reserved.  |
| 63.5(b)(1) .....            | Yes                   |  |
| 63.5(b)(2) .....            | No                    |  |
| 63.5(b)(3) .....            | Yes                   |  |

TABLE 6.—GENERAL PROVISIONS APPLICABILITY TO SUBPART CC <sup>a</sup>—Continued

| Reference                               | Applies to subpart CC | Comment  |
|---|-----------------------|--|
| 63.5(b)(4) .....                        | Yes                   | Except the cross-reference to § 63.9(b) is changed to § 63.9(b) (4) and (5). Subpart CC overrides § 63.9 (b)(2) and (b)(3).  |
| 63.5(b)(5) .....                        | Yes                   |  |
| 63.5(b)(6) .....                        | Yes                   | Reserved.<br>Except that the application shall be submitted as soon as practicable before startup but no later than 90 days (rather than 60 days) after the promulgation date of subpart CC if the construction or reconstruction had commenced and initial start-up had not occurred before the promulgation of subpart CC. |
| 63.5(c) .....                           | No                    |  |
| 63.5(d)(1)(i) .....                     | Yes                   |  |
| 63.5(d)(1)(ii) .....                    | Yes                   |  |
| 63.5(d)(1)(iii) .....                   | No                    |  |
| 63.5(d)(2) .....                        | No                    | Subpart CC requires submittal of the notification of compliance status report in § 63.654(e).  |
| 63.5(d)(3) .....                        | Yes                   |  |
| 63.5(d)(4) .....                        | Yes                   | Except § 63.5(d)(3)(ii) does not apply.  |
| 63.5(e) .....                           | Yes                   |  |
| 63.5(f)(1) .....                        | Yes                   | Except that the "60 days" in the cross-referenced § 63.5(d)(1) is changed to "90 days," and the cross-reference to (b)(2) does not apply.  |
| 63.5(f)(2) .....                        | Yes                   |  |
| 63.6(a) .....                           | Yes                   | Subpart CC specifies compliance dates for sources subject to subpart CC.   |
| 63.6(b)(1) .....                        | No                    |  |
| 63.6(b)(2) .....                        | No                    | May apply when standards are proposed under section 112(f) of the Clean Air Act.<br>§ 63.654(d) of subpart CC includes notification requirements.  |
| 63.6(b)(3) .....                        | Yes                   |  |
| 63.6(b)(4) .....                        | No                    |  |
| 63.6(b)(5) .....                        | No                    |  |
| 63.6(b)(6) .....                        | No                    |  |
| 63.6(b)(7) .....                        | No                    | § 63.640 of subpart CC specifies the compliance date.  |
| 63.6(c)(1) .....                        | No                    |  |
| 63.6(c)(2)—63.6(c)(4) .....             | No                    | Does not apply to Group 2 emission points. <sup>b</sup>  |
| 63.6(c)(5) .....                        | Yes                   |  |
| 63.6(d) .....                           | No                    | Subpart CC specifies the use of monitoring data in determining compliance with subpart CC.   |
| 63.6(e) .....                           | Yes                   |  |
| 63.6(f)(1) .....                        | Yes                   | Subpart CC specifies the use of monitoring data in determining compliance with subpart CC.   |
| 63.6(f)(2)(i) .....                     | Yes                   |  |
| 63.6(f)(2)(ii) .....                    | Yes                   | Subpart CC specifies the use of monitoring data in determining compliance with subpart CC.   |
| 63.6(f)(2)(iii) (A), (B), and (C) ..... | Yes                   |  |
| 63.6(f)(2)(iii)(D) .....                | No                    | Visible emission requirements and timing in subpart CC.  |
| 63.6(f)(2)(iv) .....                    | Yes                   |  |
| 63.6(f)(2)(v) .....                     | Yes                   | Subpart CC does not require opacity standards.<br>Except for § 63.6(i)(15), which is reserved.   |
| 63.6(f)(3) .....                        | Yes                   |  |
| 63.6(g) .....                           | Yes                   | Subpart CC specifies required testing and compliance demonstration procedures.   |
| 63.6(h) (1) and (2) .....               | Yes                   |  |
| 63.6(h) (4) and (5) .....               | No                    | Test results must be submitted in the notification of compliance status report due 150 days after compliance date, as specified in § 63.654(d) of subpart CC.  |
| 63.6(h)(6) .....                        | Yes                   |  |
| 63.6(h) (7) through (9) .....           | No                    | Subpart CC specifies required testing and compliance demonstration procedures.   |
| 63.6(i) .....                           | Yes                   |  |
| 63.6(j) .....                           | Yes                   | Test results must be submitted in the notification of compliance status report due 150 days after compliance date, as specified in § 63.654(d) of subpart CC.  |
| 63.7(a)(1) .....                        | No                    |  |
| 63.7(a)(2) .....                        | No                    | Subpart CC specifies required testing and compliance demonstration procedures.   |
| 63.7(a)(3) .....                        | Yes                   |  |
| 63.7(b) .....                           | No                    | Test results must be submitted in the notification of compliance status report due 150 days after compliance date, as specified in § 63.654(d) of subpart CC.  |
| 63.7(c) .....                           | No                    |  |
| 63.7(d) .....                           | Yes                   | Subpart CC specifies required testing and compliance demonstration procedures.   |
| 63.7(e)(1) .....                        | Yes                   |  |

TABLE 6.—GENERAL PROVISIONS APPLICABILITY TO SUBPART CC <sup>a</sup>—Continued

| Reference                   | Applies to subpart CC | Comment  |
|-----------------------------|-----------------------|--|
| 63.7(e)(2) .....            | Yes                   | Subpart CC specifies test methods and procedures.  |
| 63.7(e)(3) .....            | No                    |  |
| 63.7(e)(4) .....            | Yes                   |  |
| 63.7(f) .....               | No                    |  |
| 63.7(g) .....               | No                    | Subpart CC specifies applicable methods and provides alternatives.<br>Performance test reporting specified in § 63.654(d).   |
| 63.7(h)(1) .....            | Yes                   |  |
| 63.7(h)(2) .....            | Yes                   |  |
| 63.7(h)(3) .....            | Yes                   |  |
| 63.7(h)(4) .....            | No                    |  |
| 63.7(h)(5) .....            | Yes                   | Yes, except site-specific test plans shall not be required, and where § 63.7(g)(3) specifies submittal by the date the site-specific test plan is due, the date shall be 90 days prior to the notification of compliance status report in § 63.654(d).   |
| 63.8(a) .....               | No                    |  |
| 63.8(b)(1) .....            | Yes                   |  |
| 63.8(b)(2) .....            | No                    |  |
| 63.8(b)(3) .....            | Yes                   |  |
| 63.8(c)(1)(i) .....         | Yes                   |  |
| 63.8(c)(1)(ii) .....        | No                    |  |
| 63.8(c)(1)(iii) .....       | Yes                   |  |
| 63.8(c)(2) .....            | Yes                   |  |
| 63.8(c)(3) .....            | Yes                   |  |
| 63.8(c)(4) .....            | No                    | Subpart CC specifies locations to conduct monitoring.  |
| 63.8(c)(5)–63.8(c)(8) ..... | No                    |  |
| 63.8(d) .....               | No                    | Addressed by periodic reports in § 63.654(e) of subpart CC.  |
| 63.8(e) .....               | No                    |  |
| 63.8(f)(1) .....            | Yes                   |  |
| 63.8(f)(2) .....            | Yes                   |  |
| 63.8(f)(3) .....            | Yes                   |  |
| 63.8(f)(4)(i) .....         | No                    |  |
| 63.8(f)(4)(ii) .....        | Yes                   |  |
| 63.8(f)(4)(iii) .....       | No                    |  |
| 63.8(f)(5)(i) .....         | Yes                   |  |
| 63.8(f)(5)(ii) .....        | No                    |  |
| 63.8(f)(5)(iii) .....       | Yes                   |  |
| 63.8(f)(6) .....            | No                    | Subpart CC specifies monitoring frequency in § 63.641 and § 63.654(g)(3) of subpart CC.  |
| 63.8(g) .....               | No                    |  |
| 63.9(a) .....               | Yes                   | Subpart CC does not require continuous emission monitors.<br>Subpart CC specifies data reduction procedures in § 63.654(h)(3).<br>Except that the owner or operator does not need to send a copy of each notification submitted to the Regional Office of the EPA as stated in § 63.9(a)(4)(ii).<br>Specified in § 63.654(d)(2) of subpart CC. |
| 63.9(b)(1)(i) .....         | No                    |  |
| 63.9(b)(1)(ii) .....        | No                    |  |
| 63.9(b)(2) .....            | No                    |  |
| 63.9(b)(3) .....            | No                    |  |
| 63.9(b)(4) .....            | Yes                   |  |
| 63.9(b)(5) .....            | Yes                   |  |
| 63.9(c) .....               | Yes                   |  |
| 63.9(d) .....               | Yes                   |  |
| 63.9(e) .....               | No                    |  |
| 63.9(f) .....               | No                    |  |
| 63.9(g) .....               | No                    |  |
| 63.9(h) .....               | No                    | An initial notification report is not required under subpart CC.   |
| 63.9(i) .....               | Yes                   |  |
| 63.9(j) .....               | No                    |  |
| 63.10(a) .....              | Yes                   | Except that the notification in § 63.9(b)(4)(i) shall be submitted at the time specified in § 63.654(d)(2) of subpart CC.<br>Except that the notification in § 63.9(b)(5) shall be submitted at the time specified in § 63.654(d)(2) of subpart CC.  |
| 63.10(b)(1) .....           | No                    |  |
| 63.9(c) .....               | Yes                   | Subpart CC § 63.652(d) specifies notification of compliance status report requirements.  |
| 63.9(d) .....               | Yes                   |  |
| 63.9(e) .....               | No                    |  |
| 63.9(f) .....               | No                    |  |
| 63.9(g) .....               | No                    |  |
| 63.9(h) .....               | No                    |  |
| 63.9(i) .....               | Yes                   |  |
| 63.9(j) .....               | No                    |  |
| 63.10(a) .....              | Yes                   |  |
| 63.10(b)(1) .....           | No                    |  |
| 63.9(c) .....               | Yes                   | Subpart CC § 63.652(d) specifies notification of compliance status report requirements.  |
| 63.9(d) .....               | Yes                   |  |
| 63.9(e) .....               | No                    |  |
| 63.9(f) .....               | No                    |  |
| 63.9(g) .....               | No                    |  |
| 63.9(h) .....               | No                    |  |
| 63.9(i) .....               | Yes                   |  |
| 63.9(j) .....               | No                    |  |
| 63.10(a) .....              | Yes                   |  |
| 63.10(b)(1) .....           | No                    | Subpart CC § 63.644(d) of subpart CC specifies record retention requirements.  |

TABLE 6.—GENERAL PROVISIONS APPLICABILITY TO SUBPART CC <sup>a</sup>—Continued

| Reference                    | Applies to subpart CC | Comment  |
|------------------------------|-----------------------|--|
| 63.10(b)(2)(i) .....         | Yes                   |  |
| 63.10(b)(2)(ii) .....        | Yes                   |  |
| 63.10(b)(2)(iii) .....       | No                    |  |
| 63.10(b)(2)(iv) .....        | Yes                   |  |
| 63.10(b)(2)(v) .....         | Yes                   |  |
| 63.10(b)(2)(vi)–(ix) .....   | No                    |  |
| 63.10(b)(2)(x) .....         | Yes                   |  |
| 63.10(b)(2)(xii)–(xiv) ..... | No                    |  |
| 63.10(b)(3) .....            | No                    |  |
| 63.10(c) .....               | No                    |  |
| 63.10(d)(1) .....            | No                    |  |
| 63.10(d)(2) .....            | No                    | § 63.654(d) of subpart CC specifies performance test reporting.  |
| 63.10(d)(3) .....            | No                    |  |
| 63.10(d)(4) .....            | Yes                   |  |
| 63.10(d)(5)(i) .....         | Yes <sup>b</sup>      | Except that reports required by § 63.10(d)(5)(i) may be submitted at the same time as periodic reports specified in § 63.654(e) of subpart CC. |
| 63.10(d)(5)(ii) .....        | Yes <sup>b</sup>      |  |
| 63.10(e) .....               | No                    |  |
| 63.10(f) .....               | Yes                   |  |
| 63.11–63.15 .....            | Yes                   |  |

<sup>a</sup> Wherever subpart A specifies “postmark” dates, submittals may be sent by methods other than the U.S. Mail (e.g., by fax or courier). Submittals shall be sent by the specified dates, but a postmark is not required.

<sup>b</sup> The plan, and any records or reports of startup, shutdown, and malfunction do not apply to Group 2 emission points.

TABLE 7.—FRACTION MEASURED (F<sub>m</sub>), FRACTION EMITTED (F<sub>e</sub>), AND FRACTION REMOVED (F<sub>r</sub>) FOR HAP COMPOUNDS IN WASTEWATER STREAMS

| Chemical name                                     | CAS No. <sup>a</sup> | F <sub>m</sub> | F <sub>e</sub> | F <sub>r</sub> |
|---|----------------------|----------------|----------------|----------------|
| Benzene .....                                     | 71432                | 1.00           | 0.80           | 0.99           |
| Biphenyl .....                                    | 92524                | 0.86           | 0.45           | 0.99           |
| Butadiene (1,3-) .....                            | 106990               | 1.00           | 0.98           | 0.99           |
| Carbon disulfide .....                            | 75150                | 1.00           | 0.92           | 0.99           |
| Cumene .....                                      | 98828                | 1.00           | 0.88           | 0.99           |
| Dichloroethane (1,2-) (Ethylene dichloride) ..... | 107062               | 1.00           | 0.64           | 0.99           |
| Ethylbenzene .....                                | 100414               | 1.00           | 0.83           | 0.99           |
| Hexane .....                                      | 110543               | 1.00           | 1.00           | 0.99           |
| Methanol .....                                    | 67561                | 0.85           | 0.17           | 0.31           |
| Methyl ethyl ketone (2-Butanone) .....            | 78933                | 0.99           | 0.48           | 0.95           |
| Methyl isobutyl ketone (Hexone) .....             | 108101               | 0.98           | 0.53           | 0.99           |
| Methyl tert-butyl ether .....                     | 1634044              | 1.00           | 0.57           | 0.99           |
| Naphthalene .....                                 | 91203                | 0.99           | 0.51           | 0.99           |
| Trimethylpentane (2,2,4-) .....                   | 540841               | 1.00           | 1.00           | 0.99           |
| Xylene (m-) .....                                 | 108383               | 1.00           | 0.82           | 0.99           |
| Xylene (o-) .....                                 | 95476                | 1.00           | 0.79           | 0.99           |
| Xylene (p-) .....                                 | 106423               | 1.00           | 0.82           | 0.99           |

<sup>a</sup> CAS numbers refer to the Chemical Abstracts Service registry number assigned to specific compounds, isomers, or mixtures of compounds.

TABLE 8.—VALVE MONITORING FREQUENCY FOR PHASE III

| Performance level               | Valve monitoring frequency   |
|---------------------------------|------------------------------|
| Leaking valves <sup>a</sup> (%) |                              |
| ≥4 .....                        | Monthly or QIP. <sup>b</sup> |
| <4 .....                        | Quarterly.                   |
| <3 .....                        | Semiannual.                  |
| <2 .....                        | Annual.                      |

<sup>a</sup> Percent leaking valves is calculated as a rolling average of two consecutive monitoring periods.

<sup>b</sup> QIP=Quality improvement program. Specified in § 63.175 of subpart H of this part.

TABLE 9.—VALVE MONITORING FREQUENCY FOR ALTERNATIVE

| Performance level<br>Leaking valves <sup>a</sup> (%) | Valve monitoring frequency under § 63.649 alternative |
|--|---|
| ≥5 .....   | Monthly or QIP. <sup>b</sup>                          |
| <5 .....   | Quarterly.  |
| <4 .....   | Semiannual.   |
| <3 .....   | Annual.   |

<sup>a</sup>Percent leaking valves is calculated as a rolling average of two consecutive monitoring periods.  
<sup>b</sup>QIP=Quality improvement program. Specified in § 63.175 of subpart H of this part.

TABLE 10.—MISCELLANEOUS PROCESS VENTS—MONITORING, RECORDKEEPING AND REPORTING REQUIREMENTS FOR COMPLYING WITH 98 WEIGHT-PERCENT REDUCTION OF TOTAL ORGANIC HAP EMISSIONS OR A LIMIT OF 20 PARTS PER MILLION BY VOLUME

| Control device  | Parameters to be monitored <sup>a</sup>                                     | Recordkeeping and reporting requirements for monitored parameters   |
|---|---|---|
| Thermal incinerator .....   | Firebox temperature <sup>b</sup><br>(63.644(a)(1)(i)).                      | <ol style="list-style-type: none"> <li>1. Continuous records<sup>c</sup>.</li> <li>2. Record and report the firebox temperature averaged over the full period of the performance test—NCS<sup>d</sup>.</li> <li>3. Record the daily average firebox temperature for each operating day<sup>e</sup>.</li> <li>4. Report all daily average temperatures that are outside the range established in the NCS or operating permit and all operating days when insufficient monitoring data are collected<sup>f</sup>—PR<sup>g</sup>.</li> </ol>   |
| Catalytic incinerator .....   | Temperature upstream and downstream of the catalyst bed (63.644(a)(1)(ii)). | <ol style="list-style-type: none"> <li>1. Continuous records<sup>c</sup>.</li> <li>2. Record and report the upstream and downstream temperatures and the temperature difference across the catalyst bed averaged over the full period of the performance test—NCS<sup>d</sup>.</li> <li>3. Record the daily average upstream temperature and temperature difference across the catalyst bed for each operating day<sup>e</sup>.</li> <li>4. Report all daily average upstream temperatures that are outside the range established in the NCS or operating permit—PR<sup>g</sup>.</li> <li>5. Report all daily average temperature differences across the catalyst bed that are outside the range established in the NCS or operating permit—PR<sup>g</sup>.</li> <li>6. Report all operating days when insufficient monitoring data are collected<sup>f</sup>.</li> </ol> |
| Boiler or process heater with a design heat capacity less than 44 megawatts where the vent stream is <i>not</i> introduced into the flame zone <sup>h,i</sup> . | Firebox temperature <sup>b</sup><br>(63.644(a)(4)).                         | <ol style="list-style-type: none"> <li>1. Continuous records<sup>c</sup>.</li> <li>2. Record and report the firebox temperature averaged over the full period of the performance test—NCS<sup>d</sup>.</li> <li>3. Record the daily average firebox temperature for each operating day<sup>e</sup>.</li> <li>4. Report all daily average firebox temperatures that are outside the range established in the NCS or operating permit and all operating days when insufficient monitoring data are collected<sup>f</sup>—PR<sup>g</sup>.</li> </ol>   |
| Flare .....   | Presence of a flame at the pilot light (63.644(a)(2)).                      | <ol style="list-style-type: none"> <li>1. Hourly records of whether the monitor was continuously operating and whether a pilot flame was continuously present during each hour.</li> <li>2. Record and report the presence of a flame at the pilot light over the full period of the compliance determination—NCS<sup>d</sup>.</li> <li>3. Record the times and durations of all periods when all pilot flames for a flare are absent or the monitor is not operating.</li> <li>4. Report the times and durations of all periods when all pilot flames for a flare are absent or the monitor is not operating.</li> </ol>   |

TABLE 10.—MISCELLANEOUS PROCESS VENTS—MONITORING, RECORDKEEPING AND REPORTING REQUIREMENTS FOR COMPLYING WITH 98 WEIGHT-PERCENT REDUCTION OF TOTAL ORGANIC HAP EMISSIONS OR A LIMIT OF 20 PARTS PER MILLION BY VOLUME—Continued

| Control device            | Parameters to be monitored <sup>a</sup>   | Recordkeeping and reporting requirements for monitored parameters  |
|---------------------------|---|--|
| All control devices ..... | <p>Presence of flow diverted to the atmosphere from the control device (63.644(c)(1)) or.</p> <p>Monthly inspections of sealed valves [63.644(c)(2)].</p> | <p>1. Hourly records of whether the flow indicator was operating and whether flow was detected at any time during each hour.</p> <p>2. Record and report the times and durations of all periods when the vent stream is diverted through a bypass line or the monitor is not operating—PR<sup>§</sup>.</p> <p>1. Records that monthly inspections were performed.</p> <p>2. Record and report all monthly inspections that show the valves are not closed or the seal has been changed—PR<sup>§</sup>.</p> |

<sup>a</sup>Regulatory citations are listed in parentheses.  
<sup>b</sup>Monitor may be installed in the firebox or in the ductwork immediately downstream of the firebox before any substantial heat exchange is encountered.  
<sup>c</sup>“Continuous records” is defined in §63.641.  
<sup>d</sup>NCS = Notification of compliance status report described in §63.654.  
<sup>e</sup>The daily average is the average of all recorded parameter values for the operating day. If all recorded values during an operating day are within the range established in the NCS or operating permit, a statement to this effect can be recorded instead of the daily average.  
<sup>f</sup>When a period of excess emission is caused by insufficient monitoring data, as described in §63.654(g)(6)(i) (C) or (D), the duration of the period when monitoring data were not collected shall be included in the Periodic Report.  
<sup>g</sup>PR = Periodic Reports described in §63.654(g).  
<sup>h</sup>No monitoring is required for boilers and process heaters with a design heat capacity ≥44 megawatts or for boilers and process heaters where all vent streams are introduced into the flame zone. No recordkeeping or reporting associated with monitoring is required for such boilers and process heaters.  
<sup>i</sup>Process vents that are routed to refinery fuel gas systems are not regulated under this subpart. No monitoring, recordkeeping, or reporting is required for boilers and process heaters that combust refinery fuel gas.

[60 FR 43260, Aug. 18, 1995, as amended at 61 FR 29881–29882, June 12, 1996]

**Subpart DD—National Emission Standards for Hazardous Air Pollutants from Off-Site Waste and Recovery Operations**

SOURCE: 61 FR 34158, July 1, 1996, unless otherwise noted.

**§ 63.680 Applicability and designation of affected sources.**

(a) The provisions of this subpart apply to the owner and operator of a plant site for which both of the conditions specified in paragraphs (a)(1) and (a)(2) of this section are applicable. If either one of these conditions does not apply to the plant site, then the owner and operator of the plant site are not subject to the provisions of this subpart.

(1) The plant site is a major source of hazardous air pollutant (HAP) emissions as defined in 40 CFR 63.2.

(2) At the plant site is located one or more of operations that receives off-site materials as specified in paragraph (b) of this section and the operations is one of the following waste management operations or recovery operations as

specified in paragraphs (a)(2)(i) through (a)(2)(vi) of this section.

(i) A waste management operation that receives off-site material and the operation is regulated as a hazardous waste treatment, storage, and disposal facility (TSDF) under either 40 CFR part 264 or part 265.

(ii) A waste management operation that treats wastewater which is an off-site material and the operation is exempted from regulation as a hazardous waste treatment, storage, and disposal facility under 40 CFR 264.1(g)(6) or 40 CFR 265.1(c)(10).

(iii) A waste management operation that treats wastewater which is an off-site material and the operation meets both of the following conditions:

(A) The operation is subject to regulation under either section 402 or 307(b) of the Clean Water Act but is not owned by a “state” or “municipality” as defined by section 502(3) and 502(4), respectively, of the Clean Water Act; and

(B) The treatment of wastewater received from off-site is the predominant activity performed at the plant site.

(iv) A recovery operation that recycles or reprocesses hazardous waste which is an off-site material and the operation is exempted from regulation as a hazardous waste treatment, disposal, and storage facility under 40 CFR 264.1(g)(2) or 40 CFR 265.1(c)(6).

(v) A recovery operation that recycles or reprocesses used solvent which is an off-site material and the operation is not part of a chemical, petroleum, or other manufacturing process that is required to use air emission controls by another subpart of 40 CFR part 63.

(vi) A recovery operation that refines or reprocesses used oil which is an off-site material and the operation is regulated under 40 CFR 279 subpart F—Standards for Used Oil Processors and Refiners.

(b) For the purpose of implementing this subpart, an off-site material is a material that meets all of the criteria specified in paragraph (b)(1) of this section but is not one of the materials specified in paragraph (b)(2) of this section.

(1) An off-site material is a material that meets all of the criteria specified in paragraphs (b)(1)(i) through (b)(1)(iii) of this section. If any one of these criteria do not apply to the material, then the material is not an off-site material subject to this subpart.

(i) The material is a waste, used oil, or used solvent as defined in § 63.681 of this subpart;

(ii) The material is not produced or generated within the plant site, but the material is delivered, transferred, or otherwise moved to the plant site from a location outside the boundaries of the plant site; and

(iii) The material contains one or more of the hazardous air pollutants (HAP) listed in Table 1 of this subpart based on the composition of the material at the point-of-delivery, as defined in § 63.681 of this subpart.

(2) For the purpose of implementing this subpart, the following materials are not off-site materials:

(i) Household waste as defined in 40 CFR 258.2.

(ii) Radioactive mixed waste managed in accordance with all applicable regulations under Atomic Energy Act

and Nuclear Waste Policy Act authorities.

(iii) Waste that is generated as a result of implementing remedial activities required under the Resource Conservation and Recovery Act (RCRA) corrective action authorities (RCRA sections 3004(u), 3004(v), or 3008(h)), Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) authorities, or similar Federal or State authorities.

(iv) Waste containing HAP that is generated by residential households (e.g., old paint, home garden pesticides) and subsequently is collected as a community service by government agencies, businesses, or other organizations for the purpose of promoting the proper disposal of this waste.

(v) Waste that is generated by or transferred from units complying with all applicable regulations under 40 CFR 63 subparts F and G—National Emission Standards for Organic Hazardous Air Pollutants from the Synthetic Organic Chemical Manufacturing Industry.

(vi) Waste that is generated by or transferred from units complying with all applicable requirements specified by § 61.342(b) under 40 CFR 61 subpart FF—National Emission Standards for Benzene Waste Operations for a facility at which the total annual benzene quantity from the facility waste is equal to or greater than 10 megagrams per year.

(vii) Ship ballast water pumped from a ship to an onshore wastewater treatment facility.

(c) For the purpose of implementing this subpart, the affected sources at a plant site subject to this subpart are as follows:

(1) Off-site material management units. The affected source is the group of tanks, containers, oil-water or organic-water separators, surface impoundments, and transfer systems used to manage off-site material in each of the waste management operations and recovery operations specified in paragraphs (a)(2)(i) through (a)(2)(vi) of this section that is located at the plant site.

(2) Process vents. The affected source is the group of process vents on units used to manage off-site material in

each of the waste management operations and recovery operations specified in paragraphs (a)(2)(i) through (a)(2)(vi) of this section that is located at the plant site.

(3) Equipment leaks. The affected source is the group of equipment specified in § 63.683(b)(2)(i) through (b)(2)(iii) of this subpart that is used to handle off-site material in each of the waste management operations and recovery operations specified in paragraphs (a)(2)(i) through (a)(2)(vi) of this section that is located at the plant site.

(d) Owners and operators of plant sites at which are located affected sources subject to this subpart are exempted from the requirements of §§ 63.682 through 63.699 of this subpart in situations when the total annual quantity of the HAP that is contained in the off-site material received at the plant site is less than 1 megagram per year. This total annual HAP quantity for the off-site material shall be based on the total quantity of the HAP listed in Table 1 of this subpart as determined at the point-of-delivery for each off-site material stream. Documentation shall be prepared by the owner or operator and maintained at the plant site to support the initial determination of the total annual HAP quantity for the off-site material. The owner or operator shall perform a new determination when the extent of changes to the quantity or composition of the off-site material received at the plant site could cause the total annual HAP quantity in the off-site material to exceed limit of 1 megagram per year.

(e) *Compliance dates*—(1) *Existing sources*. The owner or operator of an affected source that commenced construction or reconstruction before October 13, 1994, shall achieve compliance with the provisions of the subpart no later than July 1, 1999 unless an extension has been granted by the Administrator as provided in 40 CFR 63.6(i).

(2) *New sources*. The owner or operator of an affected source for which construction or reconstruction commences on or after October 13, 1994, shall achieve compliance with the provisions of this subpart by July 1, 1996 or upon initial startup of operations, whichever date is later as provided in 40 CFR 63.6(b). For the purpose of implement-

ing this subpart, a waste management operation or recovery operation that commenced construction or reconstruction before October 13, 1994, and receives off-site material for the first time after July 1, 1999 is a new source, and the owner or operator of this affected source shall achieve compliance with the provisions of this subpart upon the first date that the waste management operation or recovery operation begins to manage the off-site material.

(f) The provisions of 40 CFR part 63, subpart A—General Provisions that apply and those that do not apply to this subpart are specified in Table 2 of this subpart.

#### § 63.681 Definitions.

All terms used in this subpart shall have the meaning given to them in this section, 40 CFR 63.2 of this part, and the Act.

*Boiler* means an enclosed combustion device that extracts useful energy in the form of steam and is not an incinerator or a process heater.

*Closed-vent system* means a system that is not open to the atmosphere and is composed of hard-piping, ductwork, connections, and, if necessary, fans, blowers, or other flow-inducing devices that conveys gas or vapor from an emission point to a control device.

*Closure device* means a cap, hatch, lid, plug, seal, valve, or other type of fitting that prevents or reduces air pollutant emissions to the atmosphere by blocking an opening in a cover when the device is secured in the closed position. Closure devices include devices that are detachable from the cover (e.g., a sampling port cap), manually operated (e.g., a hinged access lid or hatch), or automatically operated (e.g., a spring-loaded pressure relief valve).

*Container* means a portable unit used to hold material. Examples of containers include but are not limited to drums, dumpsters, roll-off boxes, bulk cargo containers commonly known as “portable tanks” or “totes”, cargo tank trucks, and tank rail cars.

*Continuous record* means documentation of data values measured at least once every 15 minutes and recorded at the frequency specified in this subpart.

*Continuous recorder* means a data recording device that either records an instantaneous data value at least once every 15 minutes or records 15-minutes or more frequent block averages.

*Continuous seal* means a seal that forms a continuous closure that completely covers the space between the edge of the floating roof and the wall of a tank. A continuous seal may be a vapor-mounted seal, liquid-mounted seal, or metallic shoe seal. A continuous seal may be constructed of fastened segments so as to form a continuous seal.

*Control device* means equipment used for recovering or oxidizing organic vapors. Examples of such equipment include but are not limited to carbon adsorbers, condensers, vapor incinerators, flares, boilers, and process heaters.

*Cover* means a device that prevents or reduces air pollutant emissions to the atmosphere by forming a continuous barrier over the off-site material managed in a unit. A cover may have openings (such as access hatches, sampling ports, gauge wells) that are necessary for operation, inspection, maintenance, and repair of the unit on which the cover is used. A cover may be a separate piece of equipment which can be detached and removed from the unit or a cover may be formed by structural features permanently integrated into the design of the unit.

*Emission point* means an individual tank, surface impoundment, container, oil-water or organic-water separator, transfer system, process vent, or enclosure.

*Enclosure* means a structure that surrounds a tank or container, captures organic vapors emitted from the tank or container, and vents the captured vapor through a closed vent system to a control device.

*External floating roof* means a pontoon-type or double-deck type cover that rests on the liquid surface in a tank with no fixed roof.

*Fixed roof* means a cover that is mounted on a unit in a stationary position and does not move with fluctuations in the level of the liquid managed in the unit.

*Flame zone* means the portion of the combustion chamber in a boiler or

process heater occupied by the flame envelope.

*Floating roof* means a cover consisting of a double deck, pontoon single deck, or internal floating cover which rests upon and is supported by the liquid being contained, and is equipped with a continuous seal.

*HAP* means hazardous air pollutants.

*Hard-piping* means pipe or tubing that is manufactured and properly installed in accordance with relevant standards and good engineering practices.

*Hazardous waste* means a waste that is determined to be hazardous under the Resource Conservation and Recovery Act (PL 94-580) (RCRA), as implemented by 40 CFR parts 260 and 261.

*Individual drain system* means a stationary system used to convey wastewater streams or residuals to a waste management unit or to discharge or disposal. The term includes hard-piping, all drains and junction boxes, together with their associated sewer lines and other junction boxes (e.g., manholes, sumps, and lift stations) conveying wastewater streams or residuals. For the purpose of this subpart, an individual drain system is not a drain and collection system that is designed and operated for the sole purpose of collecting rainfall runoff (e.g., stormwater sewer system) and is segregated from all other individual drain systems.

*Internal floating roof* means a cover that rests or floats on the liquid surface (but not necessarily in complete contact with it inside a tank that has a fixed roof).

*Light-material service* means the container is used to manage an off-site material for which both of the following conditions apply: the vapor pressure of one or more of the organic constituents in the off-site material is greater than 0.3 kilopascals (kPa) at 20 °C; and the total concentration of the pure organic constituents having a vapor pressure greater than 0.3 kPa at 20 °C is equal to or greater than 20 percent by weight.

*Liquid-mounted seal* means a foam- or liquid-filled continuous seal mounted in contact with the liquid in a unit.

*Maximum HAP vapor pressure* means the sum of the individual HAP equilibrium partial pressure exerted by an off-site material at the temperature equal to either: the local maximum monthly average temperature as reported by the National Weather Service when the off-site material is stored or treated at ambient temperature; or the highest calendar-month average temperature of the off-site material when the off-site material is stored at temperatures above the ambient temperature or when the off-site material is stored or treated at temperatures below the ambient temperature. For the purpose of this subpart, maximum HAP vapor pressure is determined using the procedures specified in §63.694(j) of this subpart.

*Metallic shoe seal* means a continuous seal that is constructed of metal sheets which are held vertically against the wall of the tank by springs, weighted levers, or other mechanisms and is connected to the floating roof by braces or other means. A flexible coated fabric (envelope) spans the annular space between the metal sheet and the floating roof.

*No detectable organic emissions* means no escape of organics to the atmosphere as determined using the procedure specified in §63.694(k) of this subpart.

*Off-site material* means a material that meets all of the criteria specified in paragraph §63.680(b)(1) of this subpart but is not one of the materials specified in §63.680(b)(2) of this subpart.

*Off-site material management unit* means a tank, container, surface impoundment, oil-water separator, organic-water separator, or transfer system used to manage off-site material.

*Off-site material stream* means an off-site material produced or generated by a particular process or source such that the composition and form of the material comprising the stream remain consistent. An off-site material stream may be delivered, transferred, or otherwise moved to the plant site in a continuous flow of material (e.g., wastewater flowing through a pipeline) or in a series of discrete batches of material (e.g., a truckload of drums all containing the same off-site material or multiple bulk truck loads of an off-

site material produced by the same process).

*Oil-water separator* means a separator as defined for this subpart that is used to separate oil from water.

*Operating parameter value* means a minimum or maximum value established for a control device or treatment process parameter which, if achieved by itself or in combination with one or more other operating parameter values, determines that an owner or operator has complied with an applicable emission limitation or standard.

*Organic-water separator* means a separator as defined for this subpart that is used to separate organics from water.

*Plant site* means all contiguous or adjoining property that is under common control including properties that are separated only by a road or other public right-of-way. Common control includes properties that are owned, leased, or operated by the same entity, parent entity, subsidiary, or any combination thereof. A unit or group of units within a contiguous property that are not under common control (e.g., a wastewater treatment unit or solvent recovery unit located at the site but is sold to a different company) is a different plant site.

*Point-of-delivery* means the point at the boundary or within the plant site where the owner or operator first accepts custody, takes possession, or assumes responsibility for the management of an off-site material stream managed in a waste management operation or recovery operation specified in §63.680 (a)(2)(i) through (a)(2)(vi) of this subpart. The characteristics of an off-site material stream are determined prior to combining the off-site material stream with other off-site material streams or with any other materials.

*Point-of-treatment* means a point where the off-site material to be treated in accordance with §63.683(b)(1)(ii) of this subpart exits the treatment process. The characteristics shall be determined before this material is conveyed, handled, or otherwise managed in such a manner that the material has the potential to volatilize to the atmosphere.

*Process heater* means an enclosed combustion device that transfers heat released by burning fuel directly to

process streams or to heat transfer liquids other than water.

*Process vent* means any open-ended pipe, stack, or duct that allows the passage of gases, vapors, or fumes to the atmosphere and this passage is caused by mechanical means (such as compressors or vacuum-producing systems) or by process-related means (such as volatilization produced by heating). For the purpose of this subpart, a process vent is not a stack or duct used to exhaust combustion products from a boiler, furnace, process heater, incinerator, or other combustion device.

*Recovery operation* means the collection of off-site material management units, process vents, and equipment components used at a plant site to manage an off-site material stream from the point-of-delivery through the point where the material has been recycled, reprocessed, or re-refined to obtain the intended product or to remove the physical and chemical impurities of concern.

*Safety device* means a closure device such as a pressure relief valve, frangible disc, fusible plug, or any other type of device which functions exclusively to prevent physical damage or permanent deformation to a unit or its air emission control equipment by venting gases or vapors directly to the atmosphere during unsafe conditions resulting from an unplanned, accidental, or emergency event. For the purpose of this subpart, a safety device is not used for routine venting of gases or vapors from the vapor headspace underneath a cover such as during filling of the unit or to adjust the pressure in this vapor headspace in response to normal daily diurnal ambient temperature fluctuations. A safety device is designed to remain in a closed position during normal operations and open only when the internal pressure, or another relevant parameter, exceeds the device threshold setting applicable to the air emission control equipment as determined by the owner or operator based on manufacturer recommendations, applicable regulations, fire protection and prevention codes, standard engineering codes and practices, or other requirements for the safe han-

dling of flammable, combustible, explosive, reactive, or hazardous materials.

*Separator* means a waste management unit, generally a tank, used to separate oil or organics from water. A separator consists of not only the separation unit but also the forebay and other separator basins, skimmers, weirs, grit chambers, sludge hoppers, and bar screens that are located directly after the individual drain system and prior to any additional treatment units such as an air flotation unit clarifier or biological treatment unit. Examples of a separator include, but are not limited to, an API separator, parallel-plate interceptor, and corrugated-plate interceptor with the associated ancillary equipment.

*Single-seal system* means a floating roof having one continuous seal. This seal may be vapor-mounted, liquid-mounted, or a metallic shoe seal.

*Surface impoundment* means a unit that is a natural topographical depression, man-made excavation, or diked area formed primarily of earthen materials (although it may be lined with man-made materials), which is designed to hold an accumulation of liquids. Examples of surface impoundments include holding, storage, settling, and aeration pits, ponds, and lagoons.

*Tank* means a stationary unit that is constructed primarily of nonearthen materials (such as wood, concrete, steel, fiberglass, or plastic) which provide structural support and is designed to hold an accumulation of liquids or other materials.

*Transfer system* means a stationary system for which the predominant function is to convey liquids or solid materials from one point to another point within a waste management operation or recovery operation. For the purpose of this subpart, the conveyance of material using a container (as defined for this subpart) or a self-propelled vehicle (e.g., a front-end loader) is not a transfer system. Examples of a transfer system include but are not limited to a pipeline, an individual drain system, a gravity-operated conveyor (such as a chute), and a mechanically-powered conveyor (such as a belt or screw conveyor).

*Temperature monitoring device* means a piece of equipment used to monitor temperature and having an accuracy of  $\pm 1$  percent of the temperature being monitored expressed in degrees Celsius ( $^{\circ}\text{C}$ ) or  $\pm 1.2$  degrees  $^{\circ}\text{C}$ , whichever value is greater.

*Treatment process* means a process in which an off-site material stream is physically, chemically, thermally, or biologically treated to destroy, degrade, or remove hazardous air pollutants contained in the off-site material. A treatment process can be composed of a single unit (e.g., a steam stripper) or a series of units (e.g., a wastewater treatment system). A treatment process can be used to treat one or more off-site material streams at the same time.

*Used oil* means any oil refined from crude oil or any synthetic oil that has been used and as a result of such use is contaminated by physical or chemical impurities. This definition is the same definition of "used oil" in 40 CFR 279.1.

*Used solvent* means a solvent composed of a mixture of aliphatic hydrocarbons or a mixture of one and two ring aromatic hydrocarbons that has been used and as a result of such use is contaminated by physical or chemical impurities.

*Vapor-mounted seal* means a continuous seal that is mounted such that there is a vapor space between the liquid in the unit and the bottom of the seal.

*Volatile organic hazardous air pollutant concentration or VOHAP concentration* means the fraction by weight of the HAP listed in Table 1 of this subpart that are contained in an off-site material. For the purpose of this subpart, VOHAP concentration is determined in accordance with the test methods and procedures specified in § 63.694 (b) and (c) of this subpart.

*Waste* means a material generated from industrial, commercial, mining, or agricultural operations or from community activities that is discarded, discharged, or is being accumulated, stored, or physically, chemically, thermally, or biologically treated prior to being discarded or discharged.

*Waste management operation* means the collection of off-site material management units, process vents, and

equipment components used at a plant site to manage an off-site material stream from the point-of-delivery to the point where the waste exits or is discharged from the plant site or the waste is placed for on-site disposal in a unit not subject to this subpart (e.g., a waste incinerator, a land disposal unit).

*Waste stabilization process* means any physical or chemical process used to either reduce the mobility of hazardous constituents in a waste or eliminate free liquids as determined by Test Method 9095—Paint Filter Liquids Test in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication No. SW-846, Third Edition, September 1986, as amended by Update I, November 15, 1992. A waste stabilization process includes mixing the waste with binders or other materials, and curing the resulting waste and binder mixture. Other synonymous terms used to refer to this process are "waste fixation" or "waste solidification." A waste stabilization process does not include the adding of absorbent materials to the surface of a waste, without mixing, agitation, or subsequent curing, to absorb free liquid.

#### § 63.682 [Reserved]

#### § 63.683 Standards: General.

(a) This section applies to owners and operators of affected sources as defined in § 63.680(c) of this subpart.

(b) The owner or operator shall control the air emissions from each affected source in accordance with the following requirements:

(1) For each off-site material management unit that is part of an affected source, the owner or operator shall perform one of the following except when the unit is exempted under provisions of paragraph (c) of this section:

(i) Install and operate air emission controls on the off-site material management unit in accordance with the standards specified in §§ 63.685 through 63.689 of this subpart, as applicable to the unit;

(ii) Treat the off-site material to remove or destroy the HAP in accordance with the treatment standards specified in § 63.684 of this subpart before placing

the material in the off-site material management unit; or

(iii) Determine that the average VOHAP concentration of each off-site material stream managed in the off-site material unit remains at a level less than 500 parts per million by weight (ppmw) based on the HAP content of the off-site material stream at the point-of-delivery. The owner or operator shall perform an initial determination of the average VOHAP concentration of each off-site material stream using the procedures specified in §63.694(b) of this subpart before the first time any portion of the off-site material stream is placed in the unit. Thereafter, the owner or operator shall review and update, as necessary, this determination at least once every 12 months following the date of the initial determination for the off-site material stream.

(2) For each process vent that is part of an affected source, the owner or operator shall control the HAP emitted from the process vent by implementing one of the following control measures.

(i) Install and operate air emission controls on the process vent in accordance with the standards specified in §63.690 of this subpart.

(ii) Determine that the average VOHAP concentration of each off-site material stream managed in the unit on which the process vent is used remains at a level less than 500 parts per million by weight (ppmw) based on the HAP content of the off-site material stream at the point-of-delivery. The owner or operator shall perform an initial determination of the average VOHAP concentration of each off-site material stream using the procedures specified in §63.694(b) of this subpart before the first time any portion of the off-site material stream is placed in the unit. Thereafter, the owner or operator shall review and update, as necessary, this determination at least once every 12 months following the date of the initial determination for the off-site material stream.

(3) For each equipment component that is part of an affected source and meets all of the criteria specified in paragraphs (b)(3)(i) through (b)(3)(iii) of this section, the owner or operator shall control the HAP emitted from

equipment leaks by implementing control measures in accordance with the standards specified in §63.691 of this subpart.

(i) The equipment component contains or contacts off-site material having a total HAP concentration equal to or greater than 10 percent by weight;

(ii) The equipment piece is a pump, compressor, agitator, pressure relief device, sampling connection system, open-ended valve or line, valve, connector, or instrumentation system; and

(iii) The equipment piece is intended to operate 300 hours or more during a 12-month period.

(c) Exempted off-site material management units. An off-site material management unit is exempted from the requirements specified in paragraph (b) of this section when the unit meets any one of the exemptions provided in paragraphs (c)(1) through (c)(5) of this section.

(1) An off-site material management unit is exempted from the requirements specified in paragraph (b) of this section if the unit is also subject to another subpart under 40 CFR part 61 or 40 CFR part 63, and the owner or operator is controlling the HAP listed in Table 1 of this subpart that are emitted from the unit in compliance with the provisions specified in the other applicable subpart.

(2) One or more off-site material management units located at a plant site can be exempted from the requirements specified in paragraph (b) of this section at the discretion of the owner or operator provided that the total annual quantity of HAP contained in the off-site material placed in the off-site material management units selected by the owner or operator to be exempted under this provision is less than 1 megagram per year. This total annual HAP quantity for the off-site material shall be based on the total quantity of the HAP listed in Table 1 of this subpart as determined at the point where the off-site material is placed in each exempted unit. For the off-site material management unit selected by the owner or operator to be exempted from the under this provision, the owner or operator shall meet the following requirements:

(i) Documentation shall be prepared by the owner or operator and maintained at the plant site to support the initial determination of the total annual HAP quantity of the off-site material. This documentation shall include identification of each off-site material management unit selected by the owner or operator to be exempted under paragraph (c)(2) of this section and the basis for determining the HAP content of the off-site material. The owner or operator shall perform a new determination when the extent of changes to the quantity or composition of the off-site material placed in the exempted units could cause the total annual HAP content in the off-site material to exceed 1 megagram per year.

(ii) Each of the off-site material management units exempted under paragraph (c)(2) of this section shall be permanently marked in such a manner that it can be readily identified as an exempted unit from the other off-site material management units located at the plant site.

(3) A tank or surface impoundment is exempted from the requirements specified in paragraph (b) of this section if the unit is used for a biological treatment process that destroys or degrades the HAP contained in the material entering the unit, such that either of the following conditions is met:

(i) The HAP reduction efficiency (R) for the process is equal to or greater than 95 percent, and the HAP biodegradation efficiency ( $R_{\text{bio}}$ ) for the process is equal to or greater than 95 percent. The HAP reduction efficiency (R) shall be determined using the procedure specified in § 63.694(g) of this subpart. The HAP biodegradation efficiency ( $R_{\text{bio}}$ ) shall be determined in accordance with the requirements of § 63.694(h) of this subpart.

(ii) The total actual HAP mass removal rate ( $MR_{\text{bio}}$ ) as determined in accordance with the requirements of § 63.694(i) of this subpart for the off-site material treated by the process is equal to or greater than the required HAP mass removal rate (RMR) as determined in accordance with the requirements of § 63.694(e) of this subpart.

(4) An off-site material management unit is exempted from the requirements specified in paragraph (b) of this

section if the off-site material placed in the unit is a hazardous waste that meets the numerical concentration limits, applicable to the hazardous waste, as specified in 40 CFR part 268—Land Disposal Restrictions under both of the following tables:

(i) Table “Treatment Standards for Hazardous Waste” in 40 CFR 268.40; and

(ii) Table UTS—“Universal Treatment Standards” in 40 CFR 268.48.

(5) A tank used for bulk feed of off-site material to a waste incinerator is exempted from the requirements specified in paragraph (b) of this section if all of the following conditions are met:

(i) The tank is located inside an enclosure vented to a control device that is designed and operated in accordance with all applicable requirements specified under 40 CFR part 61, subpart FF—National Emission Standards for Benzene Waste Operations for a facility at which the total annual benzene quantity from the facility waste is equal to or greater than 10 megagrams per year;

(ii) The enclosure and control device serving the tank were installed and began operation prior to July 1, 1996; and

(iii) The enclosure is designed and operated in accordance with the criteria for a permanent total enclosure as specified in “Procedure T—Criteria for and Verification of a Permanent or Temporary Total Enclosure” under 40 CFR 52.741, Appendix B. The enclosure may have permanent or temporary openings to allow worker access; passage of material into or out of the enclosure by conveyor, vehicles, or other mechanical means; entry of permanent mechanical or electrical equipment; or to direct airflow into the enclosure. The owner or operator shall perform the verification procedure for the enclosure as specified in Section 5.0 to “Procedure T—Criteria for and Verification of a Permanent or Temporary Total Enclosure” annually.

**§ 63.684 Standards: Off-site material treatment.**

(a) The provisions of this section apply to the treatment of off-site material to control air emissions for which § 63.683(b)(1)(ii) of this subpart references the requirements of this section for such treatment.

(b) The owner or operator shall remove or destroy the HAP contained in off-site material streams to be managed in the off-site material management unit in accordance with § 63.683(b)(1)(ii) of this subpart using a treatment process that continuously achieves, under normal operations, one of the following performance levels for the range of off-site material stream compositions and quantities expected to be treated:

(1) *VOHAP concentration.* The treatment process shall reduce the VOHAP concentration of the off-site material using a means, other than by dilution, to achieve one of the following performance levels, as applicable:

(i) In the case when every off-site material stream entering the treatment process has an average VOHAP concentration equal to or greater than 500 ppmw at the point-of-delivery, then the VOHAP concentration of the off-site material shall be reduced to a level that is less than 500 ppmw at the point-of-treatment.

(ii) In the case when the off-site material streams entering the treatment process include off-site material streams having average VOHAP concentrations less than 500 ppmw at the point-of-delivery, then the VOHAP concentration of the off-site material shall be reduced to a level at the point-of-treatment that is either:

(A) Less than the VOHAP concentration limit ( $C_R$ ) established for the treatment process using the procedure specified in § 63.694(d) of this subpart; or

(B) Less than the lowest VOHAP concentration determined for each of the off-site material streams entering the treatment process as determined by the VOHAP concentration of the off-site material at the point-of-delivery.

(2) *HAP mass removal.* The treatment process shall achieve a performance level such that the total quantity of HAP actually removed from the off-site material stream (MR) is equal to or greater than the required mass removal (RMR) established for the off-site material stream using the procedure specified in § 63.694(e) of this subpart. The MR for the off-site material streams shall be determined using the

procedures specified in § 63.694(f) of this subpart.

(3) *HAP reduction efficiency.* The treatment process shall achieve a performance level such that the total quantity of HAP in the off-site material stream is reduced to one of the following performance levels, as applicable:

(i) In the case when the owner or operator determines that off-site material stream entering the treatment process has an average VOHAP concentration less than 10,000 ppmw at the point-of-delivery, then the treatment process shall achieve a performance level such that the total quantity of HAP in the off-site material stream is reduced by 95 percent or more. The HAP reduction efficiency (R) for the treatment process shall be determined using the procedure specified in § 63.694(g) of this subpart. The average VOHAP concentration of the off-site material stream at the point-of-delivery shall be determined using the procedure specified in § 63.694(b) of this subpart.

(ii) In the case when the off-site material stream entering the treatment process has an average VOHAP concentration equal to or greater than 10,000 ppmw at the point-of-delivery, then the treatment process shall achieve a performance level such that the total quantity of HAP in the off-site material stream is reduced by 95 percent or more, and the average VOHAP concentration of the off-site material at the point-of-treatment is less than 100 parts per million by weight (ppmw). The HAP reduction efficiency (R) for the treatment process shall be determined using the procedure specified in § 63.694(g) of this subpart. The average VOHAP concentration of the off-site material stream at the point-of-treatment shall be determined using the procedure specified in § 63.694(c) of this subpart.

(4) *Biological degradation.* The treatment process shall achieve either of the following performance levels:

(i) The HAP reduction efficiency (R) for the treatment process is equal to or greater than 95 percent, and the HAP biodegradation efficiency ( $R_{bio}$ ) for the treatment process is equal to or greater than 95 percent. The HAP reduction

efficiency (R) shall be determined using the procedure specified in § 63.694(g) of this subpart. The HAP biodegradation efficiency ( $R_{\text{bio}}$ ) shall be determined in accordance with the requirements of § 63.694(h) of this subpart.

(ii) The total quantity of HAP actually removed from the off-site material stream by biological degradation ( $MR_{\text{bio}}$ ) shall be equal to or greater than the required mass removal (RMR) established for the off-site material stream using the procedure specified in § 63.694(e) of this subpart. The  $MR_{\text{bio}}$  of the off-site material stream shall be determined using the procedures specified in § 63.694(i) of this subpart.

(5) *Incineration.* The HAP contained in the off-site material stream shall be destroyed using one of the following combustion devices:

(i) An incinerator for which the owner or operator has either:

(A) Been issued a final permit under 40 CFR part 270, and the incinerator is designed and operated in accordance with the requirements of 40 CFR 264 subpart O—Incinerators, or

(B) Has certified compliance with the interim status requirements of 40 CFR 265 subpart O—Incinerators.

(ii) A boiler or industrial furnace for which the owner or operator has either:

(A) Been issued a final permit under 40 CFR part 270, and the combustion unit is designed and operated in accordance with the requirements of 40 CFR part 266 subpart H—Hazardous Waste Burned in Boilers and Industrial Furnaces, or

(B) Has certified compliance with the interim status requirements of 40 CFR part 266 subpart H Hazardous Waste Burned in Boilers and Industrial Furnaces.

(c) For a treatment process that removes the HAP from the off-site material by a means other than thermal destruction or biological degradation to achieve one of the performance levels specified in paragraph (b)(1), (b)(2), or (b)(3) of this section, the owner or operator shall manage the HAP removed from the off-site material in such a manner to minimize release of these HAP to the atmosphere, to the extent practical. Examples of HAP emission control measures that meet the requirements of this paragraph include

managing the HAP removed from the off-site material in units that use air emission controls in accordance with the standards specified in §§ 63.685 through 63.689 of this subpart, as applicable to the unit.

(d) When the owner or operator treats the off-site material to meet one of the performance levels specified in paragraphs (b)(1) through (b)(4) of this section, the owner or operator shall demonstrate that the treatment process achieves the selected performance level for the range of expected off-site material stream compositions expected to be treated. An initial demonstration shall be performed as soon as possible but no later than 30 days after first time an owner or operator begins using the treatment process to manage off-site material streams in accordance with the requirements of § 63.683(b)(1)(ii) of this subpart. Thereafter, the owner or operator shall review and update, as necessary, this demonstration at least once every 12 months following the date of the initial demonstration.

(e) When the owner or operator treats the off-site material to meet one of the performance levels specified in paragraphs (b)(1) through (b)(4) of this section, the owner or operator shall ensure that the treatment process is achieving the applicable performance requirements by continuously monitoring the operation of the process when it is used to treat off-site material:

(1) A continuous monitoring system shall be installed and operated for each treatment that measures operating parameters appropriate for the treatment process technology. This system shall include a continuous recorder that records the measured values of the selected operating parameters. The monitoring equipment shall be installed, calibrated, and maintained in accordance with the equipment manufacturer's specifications. The continuous recorder shall be a data recording device that records either an instantaneous data value at least once every 15 minutes or an average value for intervals of 15 minutes or less.

(2) For each monitored operating parameter, the owner or operator shall

establish a minimum operating parameter value or a maximum operating parameter value, as appropriate, to define the range of conditions at which the treatment process must be operated to continuously achieve the applicable performance requirements of this section.

(3) When the treatment process is operating to treat off-site material, the owner or operator shall inspect the data recorded by the continuous monitoring system on a routine basis and operate the treatment process such that the actual value of each monitored operating parameter is greater than the minimum operating parameter value or less than the maximum operating parameter value, as appropriate, established for the treatment process.

(f) The owner or operator shall maintain records for each treatment process in accordance with the requirements of § 63.696 of this subpart.

(g) The owner or operator shall prepare and submit reports for each treatment process in accordance with the requirements of § 63.697 of this subpart.

(h) The Administrator may at any time conduct or request that the owner or operator conduct testing necessary to demonstrate that a treatment process is achieving the applicable performance requirements of this section. The testing shall be conducted in accordance with the applicable requirements of this section. The Administrator may elect to have an authorized representative observe testing conducted by the owner or operator.

**§ 63.685 Standards: Tanks.**

(a) The provisions of this section apply to the control of air emissions from tanks for which § 63.683(b)(1)(i) of this subpart references the use of this section for such air emission control.

(b) The owner or operator shall control air emissions from each tank subject to this section in accordance with the following applicable requirements:

(1) For a tank that is part of an existing affected source but the tank is not used to manage off-site material having a maximum organic vapor pressure that is equal to or greater than 76.6 kPa nor is the tank used for a waste stabilization process as defined in

§ 63.681 of this subpart, the owner or operator shall determine whether the tank is required to use either Tank Level 1 controls or Tank Level 2 controls as specified for the tank by Table 3 of this subpart based on the off-site material maximum HAP vapor pressure and the tank's design capacity. The owner or operator shall control air emissions from a tank required by Table 3 to use Tank Level 1 controls in accordance with the requirements of paragraph (c) of this section. The owner or operator shall control air emissions from a tank required by Table 3 to use Tank Level 2 controls in accordance with the requirements of paragraph (d) of this section.

(2) For a tank that is part of a new affected source but the tank is not used to manage off-site material having a maximum organic vapor pressure that is equal to or greater than 76.6 kPa nor is the tank used for a waste stabilization process as defined in § 63.681 of this subpart, the owner or operator shall determine whether the tank is required to use either Tank Level 1 controls or Tank Level 2 controls as specified for the tank by Table 4 of this subpart based on the off-site material maximum HAP vapor pressure and the tank's design capacity. The owner or operator shall control air emissions from a tank required by Table 4 to use Tank Level 1 controls in accordance with the requirements of paragraph (c) of this section. The owner or operator shall control air emissions from a tank required by Table 4 to use Tank Level 2 controls in accordance with the requirements of paragraph (d) of this section.

(3) For a tank that is used for a waste stabilization process, the owner or operator shall control air emissions from the tank by using Tank Level 2 controls in accordance with the requirements of paragraph (d) of this section.

(4) For a tank that manages off-site material having a maximum organic vapor pressure that is equal to or greater than the 76.6 kPa, the owner or operator shall control air emissions from the tank by venting the tank through a closed-vent system to a control device in accordance with the requirements of paragraph (g) of this section.

(c) Owners and operators controlling air emissions from a tank using Tank Level 1 controls shall meet the following requirements:

(1) The owner or operator shall determine the maximum HAP vapor pressure for an off-site material to be managed in the tank using Tank Level 1 controls before the first time the off-site material is placed in the tank. The maximum HAP vapor pressure shall be determined using the procedures specified in §63.694(j) of this subpart. Thereafter, the owner or operator shall perform a new determination whenever changes to the off-site material managed in the tank could potentially cause the maximum HAP vapor pressure to increase to a level that is equal to or greater than the maximum HAP vapor pressure limit for the tank design capacity category specified in Table 3 or Table 4 of this subpart, as applicable to the tank.

(2) The owner or operator shall control air emissions from the tank using a fixed-roof in accordance with the provisions specified in 40 CFR 63 subpart OO—National Emission Standards for Tanks—Level 1.

(d) Owners and operators controlling air emissions from a tank using Tank Level 2 controls shall use one of the following tanks:

(1) A fixed-roof tank equipped with an internal floating roof in accordance with the requirements specified in paragraph (e) of this section;

(2) A tank equipped with an external floating roof in accordance with the requirements specified in paragraph (f) of this section;

(3) A tank vented through a closed-vent system to a control device in accordance with the requirements specified in paragraph (g) of this section;

(4) A pressure tank designed and operated in accordance with the requirements specified in paragraph (h) of this section; or

(5) A tank located inside an enclosure that is vented through a closed-vent system to an enclosed combustion control device in accordance with the requirements specified in paragraph (i) of this section.

(e) The owner or operator who elects to control air emissions from a tank using a fixed-roof with an internal

floating roof shall meet the requirements specified in paragraphs (e)(1) through (e)(3) of this section.

(1) The tank shall be equipped with a fixed roof and an internal floating roof in accordance with the following requirements:

(i) The internal floating roof shall be designed to float on the liquid surface except when the floating roof must be supported by the leg supports.

(ii) The internal floating roof shall be equipped with a continuous seal between the wall of the tank and the floating roof edge that meets either of the following requirements:

(A) A single continuous seal that is either a liquid-mounted seal or a metallic shoe seal, as defined in §63.681 of this subpart; or

(B) Two continuous seals mounted one above the other. The lower seal may be a vapor-mounted seal.

(iii) The internal floating roof shall meet the following specifications:

(A) Each opening in a noncontact internal floating roof except for automatic bleeder vents (vacuum breaker vents) and the rim space vents is to provide a projection below the liquid surface.

(B) Each opening in the internal floating roof shall be equipped with a gasketed cover or a gasketed lid except for leg sleeves, automatic bleeder vents, rim space vents, column wells, ladder wells, sample wells, and stub drains.

(C) Each penetration of the internal floating roof for the purpose of sampling shall have a slit fabric cover that covers at least 90 percent of the opening.

(D) Each automatic bleeder vent and rim space vent shall be gasketed.

(E) Each penetration of the internal floating roof that allows for passage of a ladder shall have a gasketed sliding cover.

(F) Each penetration of the internal floating roof that allows for passage of a column supporting the fixed roof shall have a flexible fabric sleeve seal or a gasketed sliding cover.

(2) The owner or operator shall operate the tank in accordance with the following requirements:

(i) When the floating roof is resting on the leg supports, the process of filling, emptying, or refilling shall be continuous and shall be accomplished as soon as practical.

(ii) Automatic bleeder vents are to be set closed at all times when the roof is floating, except when the roof is being floated off or is being landed on the leg supports.

(iii) Prior to filling the tank, each cover, access hatch, gauge float well or lid on any opening in the internal floating roof shall be bolted or fastened closed (i.e., no visible gaps). Rim space vents are to be set to open only when the internal floating roof is not floating or when the pressure beneath the rim exceeds the manufacturer's recommended setting.

(3) The owner or operator shall inspect the internal floating roof in accordance with the procedures specified in §63.695(b) of this subpart.

(f) The owner or operator who elects to control tank emissions by using an external floating roof shall meet the requirements specified in paragraphs (f)(1) through (f)(3) of this section.

(1) The owner or operator shall design the external floating roof in accordance with the following requirements:

(i) The external floating roof shall be designed to float on the liquid surface except when the floating roof must be supported by the leg supports.

(ii) The floating roof shall be equipped with two continuous seals, one above the other, between the wall of the tank and the roof edge. The lower seal is referred to as the primary seal, and the upper seal is referred to as the secondary seal.

(A) The primary seal shall be a liquid-mounted seal or a metallic shoe seal, as defined in §63.681 of this subpart. The total area of the gaps between the tank wall and the primary seal shall not exceed 212 square centimeters (cm<sup>2</sup>) per meter of tank diameter, and the width of any portion of these gaps shall not exceed 3.8 centimeters (cm). If a metallic shoe seal is used for the primary seal, the metallic shoe seal shall be designed so that one end extends into the liquid in the tank and the other end extends a vertical

distance of at least 61 centimeters above the liquid surface.

(B) The secondary seal shall be mounted above the primary seal and cover the annular space between the floating roof and the wall of the tank. The total area of the gaps between the tank wall and the secondary seal shall not exceed 21.2 square centimeters (cm<sup>2</sup>) per meter of tank diameter, and the width of any portion of these gaps shall not exceed 1.3 centimeters (cm).

(iii) The external floating roof shall meet the following specifications:

(A) Except for automatic bleeder vents (vacuum breaker vents) and rim space vents, each opening in a noncontact external floating roof shall provide a projection below the liquid surface.

(B) Except for automatic bleeder vents, rim space vents, roof drains, and leg sleeves, each opening in the roof shall be equipped with a gasketed cover, seal, or lid.

(C) Each access hatch and each gauge float wells shall be equipped with covers designed to be bolted or fastened when the cover is secured in the closed position.

(D) Each automatic bleeder vent and each rim space vents shall be equipped with a gasket.

(E) Each roof drain that empties into the liquid managed in the tank shall be equipped with a slotted membrane fabric cover that covers at least 90 percent of the area of the opening.

(F) Each unslotted and slotted guide pole well shall be equipped with a gasketed sliding cover or a flexible fabric sleeve seal.

(G) Each unslotted guide pole shall be equipped with a gasketed cap on the end of the pole.

(H) Each slotted guide pole shall be equipped with a gasketed float or other device which closes off the surface from the atmosphere.

(I) Each gauge hatch and each sample well shall be equipped with a gasketed cover.

(2) The owner or operator shall operate the tank in accordance with the following requirements:

(i) When the floating roof is resting on the leg supports, the process of filling, emptying, or refilling shall be continuous and shall be accomplished as soon as practical.

(ii) Except for automatic bleeder vents, rim space vents, roof drains, and leg sleeves, each opening in the roof shall be secured and maintained in a closed position at all times except when the closure device must be open for access.

(iii) Covers on each access hatch and each gauge float well shall be bolted or fastened when secured in the closed position.

(iv) Automatic bleeder vents shall be set closed at all times when the roof is floating, except when the roof is being floated off or is being landed on the leg supports.

(v) Rim space vents shall be set to open only at those times that the roof is being floated off the roof leg supports or when the pressure beneath the rim seal exceeds the manufacturer's recommended setting.

(vi) The cap on the end of each unslotted guide pole shall be secured in the closed position at all times except when measuring the level or collecting samples of the liquid in the tank.

(vii) The cover on each gauge hatch or sample well shall be secured in the closed position at all times except when the hatch or well must be opened for access.

(viii) Both the primary seal and the secondary seal shall completely cover the annular space between the external floating roof and the wall of the tank in a continuous fashion except during inspections.

(3) The owner or operator shall inspect the external floating roof in accordance with the procedures specified in § 63.695(b) of this subpart.

(g) The owner or operator who controls tank air emissions by venting to a control device shall meet the requirements specified in paragraphs (g)(1) through (g)(3) of this section.

(1) The tank shall be covered by a fixed roof and vented directly through a closed-vent system to a control device in accordance with the following requirements:

(i) The fixed roof and its closure devices shall be designed to form a con-

tinuous barrier over the entire surface area of the liquid in the tank.

(ii) Each opening in the fixed roof not vented to the control device shall be equipped with a closure device. If the pressure in the vapor headspace underneath the fixed roof is less than atmospheric pressure when the control device is operating, the closure devices shall be designed to operate such that when the closure device is secured in the closed position there are no visible cracks, holes, gaps, or other open spaces in the closure device or between the perimeter of the cover opening and the closure device. If the pressure in the vapor headspace underneath the fixed roof is equal to or greater than atmospheric pressure when the control device is operating, the closure device shall be designed to operate with no detectable organic emissions.

(iii) The fixed roof and its closure devices shall be made of suitable materials that will minimize exposure of the off-site material to the atmosphere, to the extent practical, and will maintain the integrity of the equipment throughout its intended service life. Factors to be considered when selecting the materials for and designing the fixed roof and closure devices shall include: organic vapor permeability, the effects of any contact with the liquid and its vapor managed in the tank; the effects of outdoor exposure to wind, moisture, and sunlight; and the operating practices used for the tank on which the fixed roof is installed.

(iv) The closed-vent system and control device shall be designed and operated in accordance with the requirements of § 63.693 of this subpart.

(2) Whenever an off-site material is in the tank, the fixed roof shall be installed with each closure device secured in the closed position and the vapor headspace underneath the fixed roof vented to the control device except as follows:

(i) Venting to the control device is not required, and opening of closure devices or removal of the fixed roof is allowed at the following times:

(A) To provide access to the tank for performing routine inspection, maintenance, or other activities needed for normal operations. Examples of such activities include those times when a

worker needs to open a port to sample liquid in the tank, or when a worker needs to open a hatch to maintain or repair equipment. Following completion of the activity, the owner or operator shall promptly secure the closure device in the closed position or re-install the cover, as applicable, to the tank.

(B) To remove accumulated sludge or other residues from the bottom of separator.

(ii) Opening of a safety device, as defined in §63.681 of this subpart, is allowed at any time conditions require it to do so to avoid an unsafe condition.

(3) The owner or operator shall inspect and monitor the air emission control equipment in accordance with the procedures specified in §63.695 of this subpart.

(h) The owner or operator who elects to control tank air emissions by using a pressure tank shall meet the following requirements.

(1) The tank shall be designed not to vent to the atmosphere as a result of compression of the vapor headspace in the tank during filling of the tank to its design capacity.

(2) All tank openings shall equipped with closure devices designed to operate with no detectable organic emissions as determined using the procedure specified in §63.694(k) of this subpart.

(3) Whenever an off-site material is in the tank, the tank shall be operated as a closed system that does not vent to the atmosphere except in the event that opening of a safety device, as defined in §63.681 of this subpart, is required to avoid an unsafe condition.

(i) The owner or operator who elects to control air emissions by using an enclosure vented through a closed-vent system to an enclosed combustion control device shall meet the requirements specified in paragraphs (i)(1) through (i)(4) of this section.

(1) The tank shall be located inside an enclosure. The enclosure shall be designed and operated in accordance with the criteria for a permanent total enclosure as specified in "Procedure T—Criteria for and Verification of a Permanent or Temporary Total Enclosure" under 40 CFR 52.741, Appendix B. The enclosure may have permanent or

temporary openings to allow worker access; passage of material into or out of the enclosure by conveyor, vehicles, or other mechanical means; entry of permanent mechanical or electrical equipment; or to direct airflow into the enclosure. The owner or operator shall perform the verification procedure for the enclosure as specified in Section 5.0 to "Procedure T—Criteria for and Verification of a Permanent or Temporary Total Enclosure" initially when the enclosure is first installed and, thereafter, annually.

(2) The enclosure shall be vented through a closed-vent system to an enclosed combustion control device that is designed and operated in accordance with the standards for either a vapor incinerator, boiler, or process heater specified in §63.693 of this subpart.

**§63.686 Standards: Oil-water and organic-water separators.**

(a) The provisions of this section apply to the control of air emissions from oil-water separators and organic-water separators for which §63.683(b)(1)(i) of this subpart references the use of this section for such air emission control.

(b) The owner or operator shall control air emissions from the separator subject to this section by installing and operating one of the following:

(1) A floating roof in accordance with all applicable provisions specified in 40 CFR 63 subpart VV—National Emission Standards for Oil-Water Separators and Organic-Water Separators. For portions of the separator where it is infeasible to install and operate a floating roof, such as over a weir mechanism, the owner or operator shall comply with the requirements specified in paragraph (b)(2) of this section.

(2) A fixed-roof that is vented through a closed-vent system to a control device in accordance with all applicable provisions specified in 40 CFR 63 subpart VV—National Emission Standards for Oil-Water Separators and Organic-Water Separators.

**§63.687 Standards: Surface impoundments.**

(a) The provisions of this section apply to the control of air emissions from surface impoundments for which

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§ 63.683(b)(1)(i) of this subpart references the use of this section for such air emission control.

(b) The owner or operator shall control air emissions from each surface impoundment subject to this section by installing and operating one of the following, as relevant to the surface impoundment design and operation:

(1) A floating membrane cover in accordance with the applicable provisions specified in 40 CFR 63 subpart QQ—National Emission Standards for Surface Impoundments; or

(2) A cover that is vented through a closed-vent system to a control device in accordance with all applicable provisions specified in 40 CFR 63 subpart QQ—National Emission Standards for Surface Impoundments.

### § 63.688 Standards: Containers.

(a) The provisions of this section apply to the control of air emissions from containers for which § 63.683(b)(1)(i) of this subpart references the use of this section for such air emission control.

(b) The owner or operator shall control air emissions from each container subject to this section in accordance with the following requirements, as applicable to the container, except when the special provisions for waste stabilization processes specified in paragraph (c) of this section apply to the container.

(1) For a container having a design capacity greater than 0.1 m<sup>3</sup> and less than or equal to 0.46 m<sup>3</sup>, the owner or operator shall control air emissions from the container in accordance with the standards for Container Level 1 controls as specified in 40 CFR 63 subpart PP—National Emission Standards for Containers.

(2) For a container having a design capacity greater than 0.46 m<sup>3</sup> and the container is not in light-material service as defined in § 63.681 of this subpart, the owner or operator shall control air emissions from the container in accordance with the standards for Container Level 1 controls as specified in 40 CFR 63 subpart PP—National Emission Standards for Containers.

(3) For a container having a design capacity greater than 0.46 m<sup>3</sup> and the container is in light-material service

as defined in § 63.681 of this subpart, the owner or operator shall control air emissions from the container in accordance with the standards for Container Level 2 controls as specified in 40 CFR 63 subpart PP—National Emission Standards for Containers.

(c) When a container subject to this subpart and having a design capacity greater than 0.1 m<sup>3</sup> is used for treatment of an off-site material by a waste stabilization process as defined in § 63.681 of this subpart, the owner or operator shall control air emissions from the container at those times during the process when the off-site material in container is exposed to the atmosphere in accordance with the standards for Container Level 3 controls as specified in 40 CFR 63 subpart PP—National Emission Standards for Containers.

### § 63.689 Standards: Transfer systems.

(a) The provisions of this section apply to the control of air emissions from transfer systems for which § 63.683(b)(1)(i) of this subpart references the use of this section for such air emission control.

(b) For each transfer system that is subject to this section and is an individual drain system, the owner or operator shall control air emissions from in accordance with the standards specified in 40 CFR 63 subpart RR—National Emission Standards for Individual Drain Systems.

(c) For each transfer system that is subject to this section but is not an individual drain system, the owner or operator shall control air emissions by installing and operating one of the following:

(1) A transfer system that uses covers in accordance with the requirements specified in paragraph (d) of this section.

(2) A transfer system that consists of continuous hard-piping. All joints or seams between the pipe sections shall be permanently or semi-permanently sealed (e.g., a welded joint between two sections of metal pipe or a bolted and gasketed flange).

(3) A transfer system that is enclosed and vented through a closed vent system to a control device in accordance with the following requirements:

(i) The transfer system is designed and operated such that an internal pressure in the vapor headspace in the system is maintained at a level less than atmospheric pressure when the control device is operating, and

(ii) The closed vent system and control device are designed and operated in accordance with the requirements of § 63.693 of this subpart.

(d) Owners and operators controlling air emissions from a transfer system using covers in accordance with the provisions of paragraph (c)(1) of this section shall meet the following requirements:

(1) The cover and its closure devices shall be designed to form a continuous barrier over the entire surface area of the off-site material as it is conveyed by the transfer system except for the openings at the inlet and outlet to the transfer system through which the off-site material passes. The inlet and outlet openings used for passage of the off-site material through the transfer system shall be the minimum size required for practical operation of the transfer system.

(2) The cover shall be installed in a manner such that there are no visible cracks, holes, gaps, or other open spaces between cover section joints or between the interface of the cover edge and its mounting.

(3) Except for the inlet and outlet openings to the transfer system through which the off-site material passes, each opening in the cover shall be equipped with a closure device designed to operate such that when the closure device is secured in the closed position there are no visible cracks, holes, gaps, or other open spaces in the closure device or between the perimeter of the opening and the closure device.

(4) The cover and its closure devices shall be made of suitable materials that will minimize exposure of the off-site material to the atmosphere, to the extent practical, and will maintain the integrity of the equipment throughout its intended service life. Factors to be considered when selecting the materials for and designing the cover and closure devices shall include: organic vapor permeability; the effects of any contact with the material or its vapors

conveyed in the transfer system; the effects of outdoor exposure to wind, moisture, and sunlight; and the operating practices used for the transfer system on which the cover is installed.

(5) Whenever an off-site material is in the transfer system, the cover shall be installed with each closure device secured in the closed position except as follows:

(i) Opening of closure devices or removal of the cover is allowed to provide access to the transfer system for performing routine inspection, maintenance, repair, or other activities needed for normal operations. Examples of such activities include those times when a worker needs to open a hatch or remove the cover to repair conveyance equipment mounted under the cover or to clear a blockage of material inside the system. Following completion of the activity, the owner or operator shall promptly secure the closure device in the closed position or reinstall the cover, as applicable.

(ii) Opening of a safety device, as defined in § 63.681 of this subpart, is allowed at any time conditions require it to do so to avoid an unsafe condition.

(6) The owner or operator shall inspect the air emission control equipment in accordance with the requirements specified in § 63.695 of this subpart.

#### § 63.690 Standards: Process vents.

(a) The provisions of this section apply to the control of air emissions from process vents for which § 63.683(b)(2)(i) of this subpart references the use of this section for such air emission control.

(b) The owner or operator shall control HAP emitted from the process vent within the affected source by connecting each process vent through a closed-vent system to a control device that is designed and operated in accordance with the standards specified in § 63.693 of this subpart with the following exceptions.

(1) Each individual control device used to comply with the requirements of this section is not required to meet the level of performance, as applicable to the particular control technology used, specified in §§ 63.693 (d)(1), (e)(1),

(f)(1)(i), and (g)(1)(i) of this subpart provided that these control devices are designed and operated to achieve a total reduction of 95 weight percent or more in the quantity of HAP, listed in Table 1 of this subpart, that is emitted from all process vents within the affected source.

(2) For the purpose of complying with this section, a device for which the predominate function is the recovery or capture of solvents or other organics for use, reuse, or sale (e.g., a primary condenser or a solvent recovery unit) is not a control device.

**§ 63.691 Standards: Equipment leaks.**

(a) The provisions of this section apply to the control of air emissions from equipment leaks for which § 63.683(b)(3) of this subpart references the use of this section for such air emission control.

(b) The owner or operator shall control the HAP emitted from equipment leaks in accordance with the applicable provisions of either:

(1) Section 61.242 through § 61.247 in 40 CFR Part 61 subpart V—National Emission Standards for Equipment Leaks; or

(2) Section 63.162 through § 63.182 in 40 CFR Part 63 subpart H—National Emission Standards for Organic Hazardous Air Pollutants from Equipment Leaks.

**§ 63.692 [Reserved]**

**§ 63.693 Standards: Closed-vent systems and control devices.**

(a) The provisions of this section apply to closed-vent systems and control devices used to control air emissions for which another standard references the use of this section for such air emission control.

(b) For each closed-vent system and control device used to comply with this section, the owner or operator shall meet the following requirements:

(1) The closed-vent system shall be designed and operated in accordance with the requirements specified in paragraph (c) of this section.

(2) The control device shall remove, recover, or destroy HAP at a level of performance that achieves the requirements applicable to the particular control device technology as specified in

paragraphs (d) through (h) of this section. The owner or operator shall demonstrate that the control device achieves the applicable performance requirements by either conducting a performance test or preparing a design analysis for the control device in accordance with the requirements specified in this section.

(3) Whenever gases or vapors containing HAP are vented through a closed-vent system connected to a control device used to comply with this section, the control device shall be operating except at the following times:

(i) The control device may be bypassed for the purpose of performing planned routine maintenance of the closed vent system or control device in situations when the routine maintenance cannot be performed during periods that the emission point vented to the control device is shutdown. On an annual basis, the total time that the closed-vent system or control device is bypassed to perform routine maintenance shall not exceed 240 hours per each 12 month period.

(ii) The control device may be bypassed for the purpose of correcting a malfunction of the closed vent system or control device. The owner or operator shall perform the adjustments or repairs necessary to correct the malfunction as soon as practicable after the malfunction is detected.

(4) The owner or operator shall ensure that the control device is achieving the performance requirements specified in paragraph (b)(2) of this section by continuously monitoring the operation of the control device as follows:

(i) A continuous monitoring system shall be installed and operated for each control device that measures operating parameters appropriate for the control device technology as specified in paragraphs (d) through (h) of this section. This system shall include a continuous recorder that records the measured values of the selected operating parameters. The monitoring equipment shall be installed, calibrated, and maintained in accordance with the equipment manufacturer's specifications. The continuous recorder shall be a data recording device that records either an instantaneous data value at least once

every 15 minutes or an average value for intervals of 15-minutes or less.

(ii) For each monitored operating parameter, the owner or operator shall establish a minimum operating parameter value or a maximum operating parameter value, as appropriate, to define the range of conditions at which the control device must be operated to continuously achieve the applicable performance requirements of this section. Each minimum or maximum operating parameter value shall be established as follows:

(A) If the owner or operator conducts a performance test to demonstrate control device performance, then the minimum or maximum operating parameter value shall be established based on values measured during the performance test and supplemented, as necessary, by control device design analysis and manufacturer recommendations.

(B) If the owner or operator uses a control device design analysis to demonstrate control device performance, then the minimum or maximum operating parameter value shall be established based on the control device design analysis and the control device manufacturer's recommendations.

(C) When the control device is required to be operating in accordance with the provisions of paragraph (b)(3) of this section, the owner or operator shall inspect the data recorded by the continuous monitoring system on a routine basis and operate the control device such that the actual value of each monitored operating parameter is greater than the minimum operating parameter value or less than the maximum operating parameter value, as appropriate, established for the control device.

(5) The owner or operator shall inspect and monitor the closed-vent system in accordance with the requirements of § 63.695(c) of this subpart.

(6) The owner or operator shall maintain records for each closed-vent system and control device in accordance with the requirements of § 63.696 of this subpart.

(7) The owner or operator shall prepare and submit reports for each closed-vent system and control device

in accordance with the requirements of § 63.697 of this subpart.

(8) The Administrator may at any time conduct or request that the owner or operator conduct a performance test to demonstrate that a closed-vent system and control device achieves the applicable performance requirements of this section. The performance test shall be conducted in accordance with the requirements of § 63.694(l) of this subpart. The Administrator may elect to have an authorized representative observe a performance test conducted by the owner or operator. Should the results of this performance test not agree with the determination of control device performance based on a design analysis, then the results of the performance test shall be used to establish compliance with this section.

(c) *Closed-vent system requirements.* (1) The vent stream required to be controlled shall be conveyed to the control device by either of the following closed-vent systems:

(i) A closed-vent system that is designed to operate with no detectable organic emissions using the procedure specified in § 63.694(k) of this subpart; or

(ii) A closed-vent system that is designed to operate at a pressure below atmospheric pressure. The system shall be equipped with at least one pressure gage or other pressure measurement device that can be read from a readily accessible location to verify that negative pressure is being maintained in the closed-vent system when the control device is operating.

(2) In situations when the closed-vent system includes bypass devices that could be used to divert the gas or vapor stream to the atmosphere before entering the control device, each bypass device shall be equipped with either a flow indicator as specified in paragraph (c)(2)(i) or a seal or locking device as specified in paragraph (c)(2)(ii) of this section. For the purpose of complying with this paragraph, low leg drains, high point bleeds, analyzer vents, open-ended valves or lines, spring-loaded pressure relief valves, and other fittings used for safety purposes are not considered to be bypass devices.

(i) If a flow indicator is used to comply with paragraph (c)(2) of this section, the indicator shall be installed at the inlet to the bypass line used to divert gases and vapors from the closed-vent system to the atmosphere at a point upstream of the control device inlet. For this paragraph, a flow indicator means a device which indicates either the presence of gas or vapor flow in the bypass line.

(ii) If a seal or locking device is used to comply with paragraph (c)(2) of this section, the device shall be placed on the mechanism by which the bypass device position is controlled (e.g., valve handle, damper lever) when the bypass device is in the closed position such that the bypass device cannot be opened without breaking the seal or removing the lock. Examples of such devices include, but are not limited to, a car-seal or a lock-and-key configuration valve. The owner or operator shall visually inspect the seal or closure mechanism at least once every month to verify that the bypass mechanism is maintained in the closed position.

(d) *Carbon adsorption control device requirements.* (1) The carbon adsorption system shall be designed and operated to achieve one of the following performance specifications:

(i) Recover 95 percent or more, on a weight-basis, of the total organic compounds (TOC), less methane and ethane, contained in the vent stream entering the carbon adsorption system; or

(ii) Recover 95 percent or more, on a weight-basis, of the total HAP listed in Table 1 of this subpart contained in the vent stream entering the carbon adsorption system.

(2) The owner or operator shall demonstrate that the carbon adsorption system achieves the performance requirements of paragraph (d)(1) of this section by one of the following methods:

(i) Conduct a performance test in accordance with the requirements of § 63.694(l) of this subpart.

(ii) Prepare a design analysis. This analysis shall address the vent stream characteristics and control device operating parameters for the applicable carbon adsorption system type as follows:

(A) For a regenerable carbon adsorption system, the design analysis shall address the vent stream composition, constituent concentrations, flow rate, relative humidity, and temperature and shall establish the design exhaust vent stream organic compound concentration, adsorption cycle time, number and capacity of carbon beds, type and working capacity of activated carbon used for carbon beds, design total regeneration steam flow over the period of each complete carbon bed regeneration cycle, design carbon bed temperature after regeneration, design carbon bed regeneration time, and design service life of the carbon.

(B) For a nonregenerable carbon adsorption system (e.g., a carbon canister), the design analysis shall address the vent stream composition, constituent concentrations, flow rate, relative humidity, and temperature and shall establish the design exhaust vent stream organic compound concentration, carbon bed capacity, activated carbon type and working capacity, and design carbon replacement interval based on the total carbon working capacity of the control device and emission point operating schedule.

(3) To meet the monitoring requirements of paragraph (b)(4) of this section, the owner or operator shall use one of the following continuous monitoring systems:

(i) For a regenerative-type carbon adsorption system, an integrating regeneration stream flow monitoring device equipped with a continuous recorder and a carbon bed temperature monitoring device for each adsorber vessel equipped with a continuous recorder. The integrating regeneration stream flow monitoring device shall have an accuracy of  $\pm 10$  percent and measure the total regeneration stream mass flow during the carbon bed regeneration cycle. The temperature monitoring device shall measure the carbon bed temperature after regeneration and within 15 minutes of completing the cooling cycle and the duration of the carbon bed steaming cycle.

(ii) A continuous monitoring system that measures the concentration level of organic compounds in the exhaust vent stream from the control device

using an organic monitoring device equipped with a continuous recorder.

(iii) A continuous monitoring system that measures other alternative operating parameters upon approval of the Administrator as specified in 40 CFR 63.8 (f)(1) through (f)(5) of this part.

(4) The owner or operator shall manage the carbon used for the carbon adsorption system, as follows:

(i) Following the initial startup of the control device, all carbon in the control device shall be replaced with fresh carbon on a regular, predetermined time interval that is no longer than the carbon service life established for the carbon adsorption system.

(ii) The spent carbon removed from the carbon adsorption system shall be managed in one of the following ways:

(A) Regenerated or reactivated in a thermal treatment unit that is designed and operated in accordance with the requirements of 40 CFR 264 subpart X and is permitted under 40 CFR part 270 of this chapter, or certified to be in compliance with the interim status requirements of 40 CFR 265 subpart P of this chapter.

(B) Burned in a hazardous waste incinerator that is designed and operated in accordance with the requirements of 40 CFR 264 subpart O and is permitted under 40 CFR part 270 of this chapter, or certified to be in compliance with the interim status requirements of 40 CFR part 265 subpart O.

(C) Burned in a boiler or industrial furnace that is designed and operated in accordance with the requirements of 40 CFR 266 subpart H and is permitted under 40 CFR part 270 of this chapter, or certified to be in compliance with the interim status requirements of 40 CFR part 266 subpart H of this chapter.

(e) *Condenser control device requirements.* (1) The condenser shall be designed and operated to achieve one of the following performance specifications:

(i) Recover 95 percent or more, on a weight-basis, of the total organic compounds (TOC), less methane and ethane, contained in the vent stream entering the condenser; or

(ii) Recover 95 percent or more, on a weight-basis, of the total HAP, listed in Table 1 of this subpart, contained in

the vent stream entering the condenser.

(2) The owner or operator shall demonstrate that the condenser achieves the performance requirements of paragraph (e)(1) of this section by one of the following methods:

(i) Conduct performance tests in accordance with the requirements of § 63.694(l) of this subpart.

(ii) Prepare a design analysis. This design analysis shall address the vent stream composition, constituent concentrations, flow rate, relative humidity, and temperature and shall establish the design outlet organic compound concentration level, design average temperature of the condenser exhaust vent stream, and the design average temperatures of the coolant fluid at the condenser inlet and outlet.

(3) To meet the continuous monitoring requirements of paragraph (b)(3)(ii) of this section, the owner or operator shall use one of the following continuous monitoring systems:

(i) A temperature monitoring device equipped with a continuous recorder. The temperature sensor shall be installed at a location in the exhaust vent stream from the condenser.

(ii) A continuous monitoring system that measures the concentration level of organic compounds in the exhaust vent stream from the control device using an organic monitoring device equipped with a continuous recorder.

(iii) A continuous monitoring system that measures other alternative operating parameters upon approval of the Administrator as specified in 40 CFR 63.8 (f)(1) through (f)(5) of this part.

(f) Vapor incinerator control device requirements.

(1) The vapor incinerator shall be designed and operated to achieve one of the following performance specifications:

(i) Destroy the total organic compounds (TOC), less methane and ethane, contained in the vent stream entering the vapor incinerator either:

(A) By 95 percent or more, on a weight-basis, or

(B) To achieve a total incinerator outlet concentration for the TOC, less methane and ethane, of less than or equal to 20 parts per million by volume

(ppmv) on a dry basis corrected to 3 percent oxygen.

(ii) Destroy the HAP listed in Table 1 of this subpart contained in the vent stream entering the vapor incinerator either:

(A) By 95 percent or more, on a total HAP weight-basis, or

(B) To achieve a total incinerator outlet concentration for the HAP, listed in table 1 of this subpart, of less than or equal to 20 parts per million by volume (ppmv) on a dry basis corrected to 3 percent oxygen.

(iii) Maintain the conditions in the vapor incinerator combustion chamber at a residence time of 0.5 seconds or longer and at a temperature of 760°C or higher.

(2) The owner or operator shall demonstrate that the vapor incinerator achieves the performance requirements of paragraph (f)(1) of this section by one of the following methods:

(i) Conduct performance tests in accordance with the requirements of § 63.694(l) of this subpart; or

(ii) Prepare a design analysis. The design analysis shall include analysis of the vent stream characteristics and control device operating parameters for the applicable vapor incinerator type as follows:

(A) For a thermal vapor incinerator, the design analysis shall address the vent stream composition, constituent concentrations, and flow rate and shall establish the design minimum and average temperatures in the combustion chamber and the combustion chamber residence time.

(B) For a catalytic vapor incinerator, the design analysis shall address the vent stream composition, constituent concentrations, and flow rate and shall establish the design minimum and average temperatures across the catalyst bed inlet and outlet, and the design service life of the catalyst.

(3) To meet the monitoring requirements of paragraph (b)(4) of this section, the owner or operator shall use one of the following continuous monitoring systems, as applicable:

(i) For a thermal vapor incinerator, a temperature monitoring device equipped with a continuous recorder. The temperature sensor shall be installed at a location in the combustion

chamber downstream of the combustion zone.

(ii) For a catalytic vapor incinerator, a temperature monitoring device capable of monitoring temperature at two locations equipped with a continuous recorder. One temperature sensor shall be installed in the vent stream at the nearest feasible point to the catalyst bed inlet and a second temperature sensor shall be installed in the vent stream at the nearest feasible point to the catalyst bed outlet.

(iii) For either type of vapor incinerator, a continuous monitoring system that measures the concentration level of organic compounds in the exhaust vent stream from the control device using an organic monitoring device equipped with a continuous recorder.

(iv) For either type of vapor incinerator, a continuous monitoring system that measures alternative operating parameters other than those specified in paragraphs (f)(3)(i) or (f)(3)(ii) of this section upon approval of the Administrator as specified in 40 CFR 63.8 (f)(1) through (f)(5) of this part.

(g) Boilers and process heaters control device requirements.

(1) The boiler or process heater shall be designed and operated to achieve one of the following performance specifications:

(i) Destroy the total organic compounds (TOC), less methane and ethane, contained in the vent stream introduced into the flame zone of the boiler or process heater either:

(A) By 95 percent or more, on a weight-basis, or

(B) To achieve in the exhausted combustion gases a total concentration for the TOC, less methane and ethane, of less than or equal to 20 parts per million by volume (ppmv) on a dry basis corrected to 3 percent oxygen.

(ii) Destroy the HAP listed in Table 1 of this subpart contained in the vent stream entering the vapor incinerator either:

(A) By 95 percent or more, on a total HAP weight-basis, or

(B) To achieve in the exhausted combustion gases a total concentration for the HAP, listed in table 1 of the subpart, of less than or equal to 20 parts per million by volume (ppmv) on a dry basis corrected to 3 percent oxygen.

(iii) Introduce the vent stream into the flame zone of the boiler or process heater and maintain the conditions in the combustion chamber at a residence time of 0.5 seconds or longer and at a temperature of 760°C or higher.

(iv) Introduce the vent stream with the fuel that provides the predominate heat input to the boiler or process heater (i.e., the primary fuel); or

(v) Introduce the vent stream to a boiler or process heater for which the owner or operator either has been issued a final permit under 40 CFR part 270 and complies with the requirements of 40 CFR part 266 subpart H of this chapter; or has certified compliance with the interim status requirements of 40 CFR part 266 subpart H of this chapter.

(2) The owner or operator shall demonstrate that the boiler or process heater achieves the performance requirements of paragraph (g)(1)(i), (g)(1)(ii), or (g)(1)(iii) of this section using one of the following methods:

(i) Conduct performance tests in accordance with the requirements of § 63.694(l) of this subpart.

(ii) Prepare a design analysis. The design analysis shall address the vent stream composition, constituent concentrations, and flow rate; shall establish the design minimum and average flame zone temperatures and combustion zone residence time; and shall describe the method and location where the vent stream is introduced into the flame zone.

(3) The owner or operator shall demonstrate that the boiler or process heater achieves the performance requirements of paragraph (g)(1)(iv) or (g)(1)(v) of this section by keeping records that document that the boiler or process heater is designed and operated in accordance with the applicable requirements of this section.

(4) To meet the monitoring requirements of paragraph (b)(4) of this section, the owner or operator shall use any of the following continuous monitoring systems:

(i) A temperature monitoring device equipped with a continuous recorder. The temperature sensor shall be installed at a location in the combustion chamber downstream of the flame zone.

(ii) A continuous monitoring system that measures the concentration level of organic compounds in the exhaust vent stream from the control device using an organic monitoring device equipped with a continuous recorder.

(iii) A continuous monitoring system that measures alternative operating parameters other than those specified in paragraphs (g)(3)(i) or (g)(3)(ii) of this section upon approval of the Administrator as specified in 40 CFR 63.8(f)(1) through (f)(5) of this part.

(h) Flare control device requirements. The flare shall be designed and operated in accordance with the requirements of 40 CFR 63.11(b). To meet the monitoring requirements of paragraph (b)(4) of this section, the owner or operator shall use a heat sensing monitoring device equipped with a continuous recorder that indicates the continuous ignition of the pilot flame.

#### **§ 63.694 Testing methods and procedures.**

(a) This section specifies the testing methods and procedures required for this subpart to perform the following:

(1) To determine the average VOHAP concentration for off-site material streams at the point-of-delivery for compliance with standards specified § 63.683 of this subpart, the testing methods and procedures are specified in paragraph (b) of this section.

(2) To determine the average VOHAP concentration for treated off-site material streams at the point-of-treatment for compliance with standards specified § 63.684 of this subpart, the testing methods and procedures are specified in paragraph (c) of this section.

(3) To determine the treatment process VOHAP concentration limit ( $C_R$ ) for compliance with standards specified § 63.684 of this subpart, the testing methods and procedures are specified in paragraph (d) of this section.

(4) To determine treatment process required HAP removal rate (RMR) for compliance with standards specified § 63.684 of this subpart, the testing methods and procedures are specified in paragraph (e) of this section.

(5) To determine treatment process actual HAP removal rate (MR) for compliance with standards specified § 63.684 of this subpart, the testing methods

and procedures are specified in paragraph (f) of this section.

(6) To determine treatment process required HAP reduction efficiency (R) for compliance with standards specified in §63.684 of this subpart, the testing methods and procedures are specified in paragraph (g) of this section.

(7) To determine treatment process required HAP biodegradation efficiency ( $R_{\text{bio}}$ ) for compliance with standards specified in §63.684 of this subpart, the testing methods and procedures are specified in paragraph (h) of this section.

(8) To determine treatment process required actual HAP mass removal rate ( $MR_{\text{bio}}$ ) for compliance with standards specified in §63.684 of this subpart, the testing methods and procedures are specified in paragraph (i) of this section.

(9) To determine maximum organic HAP vapor pressure of off-site materials in tanks for compliance with the standards specified in §63.685 of this subpart, the testing methods and procedures are specified in paragraph (j) of this section.

(10) To determine no detectable organic emissions, the testing methods and procedures are specified in paragraph (k) of this section.

(11) To determine closed-vent system and control device performance for compliance with the standards specified in §63.693 of this subpart, the testing methods and procedures are specified in paragraph (l) of this section.

(b) Testing methods and procedures to determine average VOHAP concentration of an off-site material stream at the point-of-delivery.

(1) The average VOHAP concentration of an off-site material at the point-of-delivery shall be determined using either direct measurement as specified in paragraph (b)(2) of this section or by knowledge as specified in paragraph (b)(3) of this section.

(2) *Direct measurement to determine VOHAP concentration*—(i) *Sampling*. Samples of the off-site material stream shall be collected from the container, pipeline, or other device used to deliver the off-site material stream to the plant site in a manner such that volatilization of organics contained in the sample is minimized and an adequately

representative sample is collected and maintained for analysis by the selected method.

(A) The averaging period to be used for determining the average VOHAP concentration for the off-site material stream on a mass-weighted average basis shall be designated and recorded. The averaging period can represent any time interval that the owner or operator determines is appropriate for the off-site material stream but shall not exceed 1 year.

(B) A sufficient number of samples, but no less than four samples, shall be collected to represent the complete range of HAP compositions and HAP quantities that occur in the off-site material stream during the entire averaging period due to normal variations in the operating conditions for the source or process generating the off-site material stream. Examples of such normal variations are seasonal variations in off-site material quantity or fluctuations in ambient temperature.

(C) All samples shall be collected and handled in accordance with written procedures prepared by the owner or operator and documented in a site sampling plan. This plan shall describe the procedure by which representative samples of the off-site material stream are collected such that a minimum loss of organics occurs throughout the sample collection and handling process and by which sample integrity is maintained. A copy of the written sampling plan shall be maintained on-site in the plant site operating records. An example of an acceptable sampling plan includes a plan incorporating sample collection and handling procedures in accordance with the requirements specified in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication No. SW-846 or Method 25D in 40 CFR part 60, appendix A.

(ii) *Analysis*. Each collected sample shall be prepared and analyzed in accordance with one of the following methods:

(A) Method 25D in 40 CFR part 60, appendix A.

(B) Method 305 in 40 CFR part 63, appendix A.

(C) Method 624 in 40 CFR part 136, appendix A.

(D) Method 1624 in 40 CFR part 136, appendix A.

(E) Method 1625 in 40 CFR part 136, appendix A.

(F) Any other analysis method that has been validated in accordance with the procedures specified in Section 5.1 and Section 5.3 of Method 301 in 40 CFR part 63, appendix A.

(iii) Calculations. The average VOHAP concentration (C) on a mass-weighted basis shall be calculated by using the results for all samples analyzed in accordance with paragraph (b)(2)(ii) of this section and the following equation:

$$\bar{C} = \frac{1}{Q_T} \times \sum_{i=1}^n (Q_i \times C_i)$$

where:

C=Average VOHAP concentration of the off-site material at the point-of-delivery on a mass-weighted basis, ppmw.

i=Individual sample "i" of the off-site material.

n=Total number of samples of the off-site material collected (at least 4) for the averaging period (not to exceed 1 year).

Q<sub>i</sub>=Mass quantity of off-site material stream represented by C<sub>i</sub>, kg/hr.

Q<sub>T</sub>=Total mass quantity of off-site material during the averaging period, kg/hr.

C<sub>i</sub>=Measured VOHAP concentration of sample "i" as determined in accordance with the requirements of § 63.693(b)(2)(ii), ppmw.

(3) Knowledge of the off-site material to determine VOHAP concentration.

(i) Documentation shall be prepared that presents the information used as the basis for the owner's or operator's knowledge of the off-site material stream's average VOHAP concentration. Examples of information that may be used as the basis for knowledge include: material balances for the source or process generating the off-site material stream; species-specific chemical test data for the off-site material stream from previous testing that are still applicable to the current off-site material stream; previous test data for other locations managing the same type of off-site material stream; or other knowledge based on informa-

tion included in manifests, shipping papers, or waste certification notices.

(ii) If test data are used as the basis for knowledge, then the owner or operator shall document the test method, sampling protocol, and the means by which sampling variability and analytical variability are accounted for in the determination of the average VOHAP concentration. For example, an owner or operator may use HAP concentration test data for the off-site material stream that are validated in accordance with Method 301 in 40 CFR part 63, appendix A of this part as the basis for knowledge of the off-site material.

(iii) An owner or operator using species-specific chemical concentration test data as the basis for knowledge of the off-site material may adjust the test data to the corresponding average VOHAP concentration value which would be obtained had the off-site material samples been analyzed using Method 305. To adjust these data, the measured concentration for each individual HAP chemical species contained in the off-site material is multiplied by the appropriate species-specific adjustment factor (f<sub>m305</sub>) listed in Table 1 of this subpart.

(iv) In the event that the Administrator and the owner or operator disagree on a determination of the average VOHAP concentration for an off-site material stream using knowledge, then the results from a determination of VOHAP concentration using direct measurement as specified in paragraph (b)(2) of this section shall be used to establish compliance with the applicable requirements of this subpart. The Administrator may perform or request that the owner or operator perform this determination using direct measurement.

(c) *Determination of average VOHAP concentration of an off-site material stream at the point-of-treatment*—(1) *Sampling*. Samples of the off-site material stream shall be collected at the point-of-treatment in a manner such that volatilization of organics contained in the sample is minimized and an adequately representative sample is collected and maintained for analysis by the selected method.

(i) The averaging period to be used for determining the average VOHAP concentration for the off-site material stream on a mass-weighted average basis shall be designated and recorded. The averaging period can represent any time interval that the owner or operator determines is appropriate for the off-site material stream but shall not exceed 1 year.

(ii) A sufficient number of samples, but no less than four samples, shall be collected to represent the complete range of HAP compositions and HAP quantities that occur in the off-site material stream during the entire averaging period due to normal variations in the operating conditions for the treatment process. Examples of such normal variations are seasonal variations in off-site material quantity or fluctuations in ambient temperature.

(iii) All samples shall be collected and handled in accordance with written procedures prepared by the owner or operator and documented in a site sampling plan. This plan shall describe the procedure by which representative samples of the off-site material stream such that a minimum loss of organics occurs throughout the sample collection and handling process and by which sample integrity is maintained. A copy of the written sampling plan shall be maintained on-site in the plant site operating records. An example of an acceptable sampling plan includes a plan incorporating sample collection and handling procedures in accordance with the requirements specified in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication No. SW-846 or Method 25D in 40 CFR part 60, appendix A.

(2) *Analysis.* Each collected sample shall be prepared and analyzed in accordance with the one of the following methods:

(i) Method 25D in 40 CFR part 60, appendix A.

(ii) Method 305 in 40 CFR part 63, appendix A.

(iii) Method 624 in 40 CFR part 136, appendix A.

(iv) Method 1624 in 40 CFR part 136, appendix A.

(v) Method 1625 in 40 CFR part 136, appendix A.

(3) Calculations. The average VOHAP concentration ( $\bar{C}$ ) on a mass-weighted basis shall be calculated by using the results for all samples analyzed in accordance with paragraph (c)(2) of this section and the following equation:

$$\bar{C} = \frac{1}{Q_T} \times \sum_{i=1}^n (Q_i \times C_i)$$

Where:

$\bar{C}$ =Average VOHAP concentration of the off-site material on a mass-weighted basis, ppmw.

i=Individual sample "i" of the off-site material.

n=Total number of samples of the off-site material collected (at least 4) for the averaging period (not to exceed 1 year).

$Q_i$ =Mass quantity of off-site material stream represented by  $C_i$ , kg/hr.

$Q_T$ =Total mass quantity of off-site material during the averaging period, kg/hr.

$C_i$ =Measured VOHAP concentration of sample "i" as determined in accordance with the requirements of § 63.693(c)(2), ppmw.

(d) *Determination of treatment process VOHAP concentration limit ( $C_R$ ).* (1) All of the off-site material streams entering the treatment process shall be identified.

(2) The average VOHAP concentration of each off-site material stream at the point-of-delivery shall be determined using the procedures specified in paragraph (b) of this section.

(3) The VOHAP concentration limit ( $C_R$ ) shall be calculated by using the results determined for each individual off-site material stream and the following equation:

$$C_R = \frac{\sum_{x=1}^m (Q_x \times \bar{C}_x) + \sum_{y=1}^n (Q_y \times 500 \text{ ppmw})}{\sum_{x=1}^m Q_x + \sum_{y=1}^n Q_y}$$

where:

- C<sub>R</sub>=VOHAP concentration limit, ppmw.
- x=Individual off-site material stream "x" that has a VOHAP concentration less than 500 ppmw at the point-of-delivery.
- y=Individual off-site material stream "y" that has a VOHAP concentration equal to or greater than 500 ppmw at the point-of-delivery.
- m=Total number of "x" off-site material streams treated by process.
- n=Total number of "y" off-site material streams treated by process.
- Q<sub>x</sub>=Total mass quantity of off-site material stream "x", kg/yr.
- Q<sub>y</sub>=Total mass quantity of off-site material stream "y", kg/yr.
- $\bar{C}_x$ =VOHAP concentration of off-site material stream "x" at the point-of-delivery, ppmw.

(e) *Determination of required HAP mass removal rate (RMR).* (1) All of the off-site material streams entering the treatment process shall be identified.

(2) The average VOHAP concentration of each off-site material stream at the point-of-delivery shall be determined in accordance with the requirements of paragraph (b) of this section.

(3) For each individual off-site material stream that has an average VOHAP concentration equal to or greater than 500 ppmw at the point-of-delivery, the average volumetric flow rate and the density of the off-site material stream at the point-of-delivery shall be determined.

(4) The required HAP mass removal rate (RMR) shall be calculated by using the average VOHAP concentration, average volumetric flow rate, and density determined for each off-site material stream and the following equation:

$$RMR = \sum_{y=1}^n \left[ V_y \times k_y \times \frac{(\bar{C}_y - 500 \text{ ppmw})}{10^6} \right]$$

where:

- RMR=Required HAP mass removal rate, kg/hr.
- y=Individual off-site material stream "y" that has a VOHAP concentration equal to or greater than 500 ppmw at the point-of-delivery as determined in accordance with the requirements of §63.693(b).
- n=Total number of "y" off-site material streams treated by process.
- V<sub>y</sub>=Average volumetric flow rate of off-site material stream "y" at the point-of-delivery, m<sup>3</sup>/hr.
- k<sub>y</sub>=Density of off-site material stream "y", kg/m<sup>3</sup>.
- $\bar{C}_y$ =Average VOHAP concentration of off-site material stream "y" at the point-of-delivery as determined in accordance with the requirements of §63.693(b), ppmw.

(f) *Determination of actual HAP mass removal rate (MR).* (1) The actual HAP mass removal rate (MR) shall be determined based on results for a minimum of three consecutive runs. The sampling time for each run shall be 1 hour.

(2) The off-site material HAP mass flow entering the process (E<sub>b</sub>) and the off-site material HAP mass flow exiting the process (E<sub>a</sub>) shall be determined in accordance with the requirements of paragraph (g)(4) of this section.

(3) The actual mass removal rate shall be calculated by using the mass flow rates determined in accordance with the requirements of paragraph (f)(2) of this section and the following equation:

$$MR = E_b - E_a$$

where:

- MR=Actual HAP mass removal rate, kg/hr.
- E<sub>b</sub>=Off-site material HAP mass flow entering process as determined in accordance with the requirements of paragraph (f)(2) of this section, kg/hr.

$E_a$ =Off-site material HAP mass flow exiting process as determined in accordance with the requirements of paragraph (f)(2) of this section, kg/hr.

(g) *Determination of treatment process HAP reduction efficiency (R)*. (1) The HAP reduction efficiency (R) for a treatment process shall be determined based on results for a minimum of three consecutive runs.

(2) All off-site material streams entering the treatment process and all off-site material streams exiting the treatment process shall be identified. The owner or operator shall prepare a sampling plan for measuring these streams that accurately reflects the retention time of the off-site material in the process.

(3) For each run, information shall be determined for each off-site material stream identified in paragraph (g)(2) of this section using the following procedures:

(i) The mass quantity of each off-site material stream entering the process ( $Q_b$ ) and the mass quantity of each off-site material stream exiting the process ( $Q_a$ ) shall be determined.

(ii) The average VOHAP concentration at the point-of-delivery of each off-site material stream entering the process ( $\bar{C}_b$ ) during the run shall be determined in accordance with the requirements of paragraph (b) of this section. The VOHAP concentration of the off-site material stream at the point-of-treatment ( $C_a$ ) during the run shall be determined in accordance with the applicable requirements of paragraph (c) of this section.

(4) The off-site material HAP mass flow entering the process ( $E_b$ ) and the off-site material HAP mass flow exiting the process ( $E_a$ ) shall be calculated by using the results determined in accordance with paragraph (g)(3) of this section and the following equations:

$$E_b = \frac{1}{10^6} \sum_{j=1}^m (Q_{bj} \times \bar{C}_{bj})$$

$$E_a = \frac{1}{10^6} \sum_{j=1}^m (Q_{aj} \times \bar{C}_{aj})$$

where:

$E_b$ =Off-site material HAP mass flow entering process, kg/hr.

$E_a$ =Off-site material HAP mass flow exiting process, kg/hr.

$m$ =Total number of runs (at least 3)

$j$ =Individual run "j"

$Q_v$ =Mass quantity of off-site material entering process during run "j", kg/hr.

$Q_{aj}$ =Average mass quantity of off-site material exiting process during run "j", kg/hr.

$\bar{C}_{aj}$ =Average VOHAP concentration of off-site material exiting process during run "j" as determined in accordance with the requirements of § 63.693(b), ppmw.

$\bar{C}_v$ =Average VOHAP concentration of off-site material entering process during run "j" as determined in accordance with the requirements of § 63.693(b), ppmw.

(5) The HAP reduction efficiency (R) shall be calculated by using the results determined in accordance with paragraph (g)(4) of this section and the following equation:

$$R = \frac{E_b - E_a}{E_b} \times 100$$

where:

R=HAP reduction efficiency, percent.

$E_b$ =Off-site material HAP mass flow entering process as determined in accordance with the requirements of paragraph (d)(4) of this section, kg/hr.

$E_a$ =Off-site material HAP mass flow exiting process as determined in accordance with the requirements of paragraph (d)(4) of this section, kg/hr.

(h) *Determination of HAP biodegradation efficiency ( $R_{bio}$ )*. (1) The fraction of HAP biodegraded ( $F_{bio}$ ) shall be determined using the procedure specified in 40 CFR part 63, appendix C of this part.

(2) The HAP biodegradation efficiency ( $R_{bio}$ ) shall be calculated by using the following equation:

$$R_{bio} = F_{bio} \times 100$$

where:

$R_{\text{bio}}$  = HAP biodegradation efficiency, percent.

$F_{\text{bio}}$  = Fraction of HAP biodegraded as determined in accordance with the requirements of paragraph (h)(1) of this section.

(i) *Determination of actual HAP mass removal rate* ( $MR_{\text{bio}}$ ). (1) The actual HAP mass removal rate ( $MR_{\text{bio}}$ ) shall be determined based on results for a minimum of three consecutive runs. The sampling time for each run shall be 1 hour.

(2) The off-site material HAP mass flow entering the process ( $E_{\text{b}}$ ) shall be determined in accordance with the requirements of paragraph (g)(4) of this section.

(3) The fraction of HAP biodegraded ( $F_{\text{bio}}$ ) shall be determined using the procedure specified in 40 CFR part 63, appendix C of this part.

(4) The actual mass removal rate shall be calculated by using the HAP mass flow rates and fraction of HAP biodegraded determined in accordance with the requirements of paragraphs (i)(2) and (i)(3), respectively, of this section and the following equation:

$$MR_{\text{bio}} = E_{\text{b}} \times F_{\text{bio}}$$

where:

$MR_{\text{bio}}$  = Actual HAP mass removal rate, kg/hr.

$E_{\text{b}}$  = Off-site material HAP mass flow entering process, kg/hr.

$F_{\text{bio}}$  = Fraction of HAP biodegraded.

(j) *Determination of maximum HAP vapor pressure for off-site material in a tank*. (1) The maximum HAP vapor pressure of the off-site material composition managed in a tank shall be determined using either direct measurement as specified in paragraph (j)(2) of this section or by knowledge of the off-site material as specified by paragraph (j)(3) of this section.

(2) Direct measurement to determine the maximum HAP vapor pressure of an off-site material.

(i) *Sampling*. A sufficient number of samples shall be collected to be representative of the off-site material contained in the tank. All samples shall be collected and handled in accordance with written procedures prepared by the owner or operator and documented in a site sampling plan. This plan shall

describe the procedure by which representative samples of the off-site material is collected such that a minimum loss of organics occurs throughout the sample collection and handling process and by which sample integrity is maintained. A copy of the written sampling plan shall be maintained on-site in the plant site operating records. An example of an acceptable sampling plan includes a plan incorporating sample collection and handling procedures in accordance with the requirements specified in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication No. SW-846 or Method 25D in 40 CFR part 60, appendix A.

(ii) *Analysis*. Any one of the following methods may be used to analyze the samples and compute the maximum HAP vapor pressure of the off-site material:

(A) Method 25E in 40 CFR part 60 appendix A;

(B) Methods described in American Petroleum Institute Bulletin 2517, "Evaporation Loss from External Floating Roof Tanks,";

(C) Methods obtained from standard reference texts;

(D) ASTM Method 2879-83; or

(E) Any other method approved by the Administrator.

(3) Use of knowledge to determine the maximum HAP vapor pressure of the off-site material. Documentation shall be prepared and recorded that presents the information used as the basis for the owner's or operator's knowledge that the maximum HAP vapor pressure of the off-site material is less than the maximum vapor pressure limit listed in Table 3 or Table 4 of this subpart for the applicable tank design capacity category. Examples of information that may be used include: the off-site material is generated by a process for which at other locations it previously has been determined by direct measurement that the off-site material maximum HAP vapor pressure is less than the maximum vapor pressure limit for the appropriate tank design capacity category.

(k) *Procedure for determining no detectable organic emissions for the purpose of complying with this subpart*. (1) The test shall be conducted in accordance with

the procedures specified in Method 21 of 40 CFR part 60, appendix A. Each potential leak interface (i.e., a location where organic vapor leakage could occur) on the cover and associated closure devices shall be checked. Potential leak interfaces that are associated with covers and closure devices include, but are not limited to: the interface of the cover and its foundation mounting; the periphery of any opening on the cover and its associated closure device; and the sealing seat interface on a spring-loaded pressure-relief valve.

(2) The test shall be performed when the unit contains a material having an organic HAP concentration representative of the range of concentrations for the off-site materials expected to be managed in the unit. During the test, the cover and closure devices shall be secured in the closed position.

(3) The detection instrument shall meet the performance criteria of Method 21 of 40 CFR part 60, appendix A, except the instrument response factor criteria in section 3.1.2(a) of Method 21 shall be for the average composition of the organic constituents in the off-site material placed in the unit, not for each individual organic constituent.

(4) The detection instrument shall be calibrated before use on each day of its use by the procedures specified in Method 21 of 40 CFR part 60, appendix A.

(5) Calibration gases shall be as follows:

(i) Zero air (less than 10 ppmv hydrocarbon in air); and

(ii) A mixture of methane in air at a concentration of approximately, but less than 10,000 ppmv.

(6) The background level shall be determined according to the procedures in Method 21 of 40 CFR part 60 appendix A.

(7) Each potential leak interface shall be checked by traversing the instrument probe around the potential leak interface as close to the interface as possible, as described in Method 21. In the case when the configuration of the cover or closure device prevents a complete traverse of the interface, all accessible portions of the interface shall be sampled. In the case when the configuration of the closure device pre-

vents any sampling at the interface and the device is equipped with an enclosed extension or horn (e.g., some pressure relief devices), the instrument probe inlet shall be placed at approximately the center of the exhaust area to the atmosphere.

(8) The arithmetic difference between the maximum organic concentration indicated by the instrument and the background level shall be compared with the value of 500 ppmv. If the difference is less than 500 ppmv, then the potential leak interface is determined to operate with no detectable organic emissions.

(1) Control device performance test procedures.

(1) Method 1 or 1A of 40 CFR part 60, appendix A, as appropriate, shall be used for selection of the sampling sites at the inlet and outlet of the control device.

(i) To determine compliance with a control device percent reduction requirement, sampling sites shall be located at the inlet of the control device as specified in paragraphs (1)(1)(i)(A) and (1)(1)(i)(B) of this section, and at the outlet of the control device.

(A) The control device inlet sampling site shall be located after the final product recovery device.

(B) If a vent stream is introduced with the combustion air or as a auxiliary fuel into a boiler or process heater, the location of the inlet sampling sites shall be selected to ensure that the measurement of total HAP concentration or TOC concentration, as applicable, includes all vent streams and primary and secondary fuels introduced into the boiler or process heater.

(ii) To determine compliance with an enclosed combustion device concentration limit, the sampling site shall be located at the outlet of the device.

(2) The gas volumetric flow rate shall be determined using Method 2, 2A, 2C, or 2D of 40 CFR part 60, appendix A, as appropriate.

(3) To determine compliance with the control device percent reduction requirement, the owner or operator shall use Method 18 of 40 CFR part 60, appendix A of this chapter; alternatively, any other method or data that has been validated according to the applicable procedures in Method 301 in 40 CFR

part 63, appendix A of this part may be used. The following procedures shall be used to calculate percent reduction efficiency:

(i) The minimum sampling time for each run shall be 1 hour in which either an integrated sample or a minimum of four grab samples shall be taken. If grab sampling is used, then the sam-

ples shall be taken at approximately equal intervals in time such as 15 minute intervals during the run.

(ii) The mass rate of either TOC (minus methane and ethane) or total HAP ( $E_i$  and  $E_o$ , respectively) shall be computed.

(A) The following equations shall be used:

$$E_i = K_2 \left( \sum_{j=1}^{150} 150n C_{ij} M_{ij} \right) Q_i$$

$$E_o = K_2 \left( \sum_{j=1}^{150} 150n C_{oj} M_{oj} \right) Q_o$$

where:

$C_{ij}$ ,  $C_{oj}$ =Concentration of sample component j of the gas stream at the inlet and outlet of the control device, respectively, dry basis, parts per million by volume.

$E_i$ ,  $E_o$ =Mass rate of TOC (minus methane and ethane) or total HAP at the inlet and outlet of the control device, respectively, dry basis, kilogram per hour.

$M_{ij}$ ,  $M_{oj}$ =Molecular weight of sample component j of the gas stream at the inlet and outlet of the control device, respectively, gram/gram-mole.

$Q_i$ ,  $Q_o$ =Flow rate of gas stream at the inlet and outlet of the control device, respectively, dry standard cubic meter per minute.

$K_2$ =Constant,  $2.494 \times 10^{-6}$  (parts per million)<sup>-1</sup> (gram-mole per standard cubic meter) (kilogram/gram) (minute/hour), where standard temperature (gram-mole per standard cubic meter) is 20°C.

(B) When the TOC mass rate is calculated, all organic compounds (minus methane and ethane) measured by Method 18 of 40 CFR part 60, appendix A shall be summed using the equation in paragraph (l)(3)(ii)(A) of this section.

(C) When the total HAP mass rate is calculated, only the HAP constituents shall be summed using the equation in paragraph (l)(3)(ii)(A) of this section.

(iii) The percent reduction in TOC (minus methane and ethane) or total HAP shall be calculated as follows:

$$R_{cd} = \frac{E_i - E_o}{E_i} \times 100$$

where:

$R_{cd}$ =Control efficiency of control device, percent.

$E_i$ =Mass rate of TOC (minus methane and ethane) or total HAP at the inlet to the control device as calculated under paragraph (l)(3)(ii) of this section, kilograms TOC per hour or kilograms HAP per hour.

$E_o$ =Mass rate of TOC (minus methane and ethane) or total HAP at the outlet of the control device, as calculated under paragraph (l)(3)(ii) of this section, kilograms TOC per hour or kilograms HAP per hour.

(iv) If the vent stream entering a boiler or process heater is introduced with the combustion air or as a secondary fuel, the weight-percent reduction of total HAP or TOC (minus methane and ethane) across the device shall be determined by comparing the TOC (minus methane and ethane) or total HAP in all combusted vent streams and primary and secondary fuels with the TOC (minus methane and ethane) or total HAP exiting the device, respectively.

(4) To determine compliance with the enclosed combustion device total HAP

concentration limit of this subpart, the owner or operator shall use Method 18 of 40 CFR part 60, appendix A to measure either TOC (minus methane and ethane) or total HAP. Alternatively, any other method or data that has been validated according to Method 301 in appendix A of this part, may be used. The following procedures shall be used to calculate parts per million by volume concentration, corrected to 3 percent oxygen:

(i) The minimum sampling time for each run shall be 1 hour in which either an integrated sample or a minimum of four grab samples shall be taken. If grab sampling is used, then the samples shall be taken at approximately equal intervals in time, such as 15 minute intervals during the run.

(ii) The TOC concentration or total HAP concentration shall be calculated according to paragraph (m)(4)(ii)(A) or (m)(4)(ii)(B) of this section.

(A) The TOC concentration ( $C_{TOC}$ ) is the sum of the concentrations of the individual components and shall be computed for each run using the following equation:

$$C_{TOC} = \sum_{i=1}^x \frac{\sum_{j=1}^n C_{ij}}{x}$$

where:

$C_{TOC}$ =Concentration of total organic compounds minus methane and ethane, dry basis, parts per million by volume.

$C_{ij}$ =Concentration of sample components j of sample i, dry basis, parts per million by volume.

n=Number of components in the sample.

x=Number of samples in the sample run.

(B) The total HAP concentration ( $C_{HAP}$ ) shall be computed according to the equation in paragraph (l)(4)(ii)(A) of this section except that only HAP constituents shall be summed.

(iii) The measured TOC concentration or total HAP concentration shall be corrected to 3 percent oxygen as follows:

(A) The emission rate correction factor or excess air, integrated sampling and analysis procedures of Method 3B

of 40 CFR part 60, appendix A shall be used to determine the oxygen concentration ( $\%O_{2dry}$ ). The samples shall be collected during the same time that the samples are collected for determining TOC concentration or total HAP concentration.

(B) The concentration corrected to 3 percent oxygen ( $C_c$ ) shall be computed using the following equation:

$$C_c = C_m \left( \frac{17.9}{20.9 - \%O_{2dry}} \right)$$

where:

$C_c$ =TOC concentration or total HAP concentration corrected to 3 percent oxygen, dry basis, parts per million by volume.

$C_m$ =Measured TOC concentration or total HAP concentration, dry basis, parts per million by volume.

$\%O_{2dry}$ =Concentration of oxygen, dry basis, percent by volume.

**§ 63.695 Inspection and monitoring requirements.**

(a) This section specifies the inspection and monitoring procedures required to perform the following:

(1) To inspect tank fixed-roofs and floating roofs for compliance with the Tank level 2 controls standards specified in §63.685 of this subpart, the inspection procedures are specified in paragraph (b) of this section.

(2) To inspect and monitor closed-vent systems for compliance with the standards specified in §63.693 of this subpart, the inspection and monitoring procedure are specified in paragraph (c) of this section.

(3) To inspect and monitor transfer system covers for compliance with the standards specified in §63.689(c)(1) of this subpart, the inspection and monitoring procedure are specified in paragraph (d) of this section.

(b) *Tank Level 2 fixed roof and floating roof inspection requirements.* (1) Owners and operators that use a tank equipped with an internal floating roof in accordance with the provisions of §63.685(e) of this subpart shall meet the following inspection requirements:

(i) The floating roof and its closure devices shall be visually inspected by

the owner or operator to check for defects that could result in air emissions. Defects include, but are not limited to, the internal floating roof is not floating on the surface of the liquid inside the tank; liquid has accumulated on top of the internal floating roof; any portion of the roof seals have detached from the roof rim; holes, tears, or other openings are visible in the seal fabric; the gaskets no longer close off the waste surfaces from the atmosphere; or the slotted membrane has more than 10 percent open area.

(ii) The owner or operator shall inspect the internal floating roof components as follows except as provided for in paragraph (b)(1)(iii) of this section:

(A) Visually inspect the internal floating roof components through openings on the fixed-roof (e.g., man-holes and roof hatches) at least once every 12 months after initial fill, and

(B) Visually inspect the internal floating roof, primary seal, secondary seal (if one is in service), gaskets, slotted membranes, and sleeve seals (if any) each time the tank is emptied and degassed and at least every 10 years. Prior to each inspection, the owner or operator shall notify the Administrator in accordance with the reporting requirements specified in § 63.697 of this subpart.

(iii) As an alternative to performing the inspections specified in paragraph (b)(1)(ii) of this section for an internal floating roof equipped with two continuous seals mounted one above the other, the owner or operator may visually inspect the internal floating roof, primary and secondary seals, gaskets, slotted membranes, and sleeve seals (if any) each time the tank is emptied and degassed and at least every 5 years. Prior to each inspection, the owner or operator shall notify the Administrator in accordance with the reporting requirements specified in § 63.697 of this subpart.

(iv) In the event that a defect is detected, the owner or operator shall repair the defect in accordance with the requirements of paragraph (b)(4) of this section.

(v) The owner or operator shall maintain a record of the inspection in accordance with the requirements specified in § 63.696 of this subpart.

(2) Owners and operators that use a tank equipped with an external floating roof in accordance with the provisions of § 63.685(f) of this subpart shall meet the following requirements:

(i) The owner or operator shall measure the external floating roof seal gaps in accordance with the following requirements:

(A) The owner or operator shall perform measurements of gaps between the tank wall and the primary seal within 60 days after initial operation of the tank following installation of the floating roof and, thereafter, at least once every 5 years. Prior to each inspection, the owner or operator shall notify the Administrator in accordance with the reporting requirements specified in § 63.697 of this subpart.

(B) The owner or operator shall perform measurements of gaps between the tank wall and the secondary seal within 60 days after initial operation of the separator following installation of the floating roof and, thereafter, at least once every year. Prior to each inspection, the owner or operator shall notify the Administrator in accordance with the reporting requirements specified in § 63.697 of this subpart.

(C) If a tank ceases to hold off-site material for a period of 1 year or more, subsequent introduction of off-site material into the tank shall be considered an initial operation for the purposes of paragraphs (b)(2)(i)(A) and (b)(2)(i)(B) of this section.

(D) The owner shall determine the total surface area of gaps in the primary seal and in the secondary seal individually using the following procedure.

(1) The seal gap measurements shall be performed at one or more floating roof levels when the roof is floating off the roof supports.

(2) Seal gaps, if any, shall be measured around the entire perimeter of the floating roof in each place where a 0.32-centimeter (cm) diameter uniform probe passes freely (without forcing or binding against the seal) between the seal and the wall of the tank and measure the circumferential distance of each such location.

(3) For a seal gap measured under paragraph (b)(2) of this section, the gap surface area shall be determined by

using probes of various widths to measure accurately the actual distance from the tank wall to the seal and multiplying each such width by its respective circumferential distance.

(4) The total gap area shall be calculated by adding the gap surface areas determined for each identified gap location for the primary seal and the secondary seal individually, and then dividing the sum for each seal type by the nominal perimeter of the tank. These total gap areas for the primary seal and secondary seal are then compared to the respective standards for the seal type as specified in § 63.685(f)(1) of this subpart.

(E) In the event that the seal gap measurements do not conform to the specifications in § 63.685(f)(1) of this subpart, the owner or operator shall repair the defect in accordance with the requirements of paragraph (b)(4) of this section.

(F) The owner or operator shall maintain a record of the inspection in accordance with the requirements specified in § 63.696 of this subpart.

(ii) The owner or operator shall visually inspect the external floating roof in accordance with the following requirements:

(A) The floating roof and its closure devices shall be visually inspected by the owner or operator to check for defects that could result in air emissions. Defects include, but are not limited to: holes, tears, or other openings in the rim seal or seal fabric of the floating roof; a rim seal detached from the floating roof; all or a portion of the floating roof deck being submerged below the surface of the liquid in the tank; broken, cracked, or otherwise damaged seals or gaskets on closure devices; and broken or missing hatches, access covers, caps, or other closure devices.

(B) The owner or operator shall perform the inspections following installation of the external floating roof and, thereafter, at least once every year.

(C) In the event that a defect is detected, the owner or operator shall repair the defect in accordance with the requirements of paragraph (b)(4) of this section.

(D) The owner or operator shall maintain a record of the inspection in

accordance with the requirements specified in § 63.696(d) of this subpart.

(3) Owners and operators that use a tank equipped with a fixed roof in accordance with the provisions of § 63.685(g) of this subpart shall meet the following requirements:

(i) The fixed roof and its closure devices shall be visually inspected by the owner or operator to check for defects that could result in air emissions. Defects include, but are not limited to, visible cracks, holes, or gaps in the roof sections or between the roof and the separator wall; broken, cracked, or otherwise damaged seals or gaskets on closure devices; and broken or missing hatches, access covers, caps, or other closure devices.

(ii) The owner or operator shall perform the inspections following installation of the fixed roof and, thereafter, at least once every year.

(iii) In the event that a defect is detected, the owner or operator shall repair the defect in accordance with the requirements of paragraph (b)(4) of this section.

(iv) The owner or operator shall maintain a record of the inspection in accordance with the requirements specified in § 63.696(e) of this subpart.

(4) The owner or operator shall repair each defect detected during an inspection performed in accordance with the requirements of paragraph (b)(1), (b)(2), or (b)(3) of this section in the following manner:

(i) The owner or operator shall within 45 calendar days of detecting the defect either repair the defect or empty the tank and remove it from service. If within this 45-day period the defect cannot be repaired or the tank cannot be removed from service without disrupting operations at the plant site, the owner or operator is allowed two 30-day extensions. In cases when an owner or operator elects to use a 30-day extension, the owner or operator shall prepare and maintain documentation describing the defect, explaining why alternative storage capacity is not available, and specify a schedule of actions that will ensure that the control equipment will be repaired or the tank emptied as soon as possible.

(ii) When a defect is detected during an inspection of a tank that has been

emptied and degassed, the owner or operator shall repair the defect before re-filling the tank.

(c) Owners and operators that use a closed vent system in accordance with the provisions of § 63.693 of this subpart shall meet the following inspection and monitoring requirements:

(1) Each closed-vent system that is used to comply with § 63.693(c)(1)(i) of this subpart shall be inspected and monitored in accordance with the following requirements:

(i) At initial startup, the owner or operator shall monitor the closed-vent system components and connections using the procedures specified in § 63.693(k) of this subpart to demonstrate that the closed-vent system operates with no organic detectable emissions.

(ii) After initial startup, the owner or operator shall inspect and monitor the closed-vent system as follows:

(A) Closed-vent system joints, seams, or other connections that are permanently or semi-permanently sealed (e.g., a welded joint between two sections of hard piping or a bolted and gasketed ducting flange) shall be visually inspected at least once per year to check for defects that could result in air emissions. The owner or operator shall monitor a component or connection using the procedures specified in § 63.693(k) of this subpart to demonstrate that it operates with no detectable organic emissions following any time the component is repaired or replaced (e.g., a section of damaged hard piping is replaced with new hard piping) or the connection is unsealed (e.g., a flange is unbolted).

(B) Closed-vent system components or connections other than those specified in paragraph (c)(1)(ii)(A) of this section, shall be monitored at least once per year using the procedures specified in § 63.693(k) of this subpart to demonstrate that components or connections operate with no detectable organic emissions.

(iii) In the event that a defect or leak is detected, the owner or operator shall repair the defect or leak in accordance with the requirements of paragraph (3) of this section.

(iv) The owner or operator shall maintain a record of the inspection and

monitoring in accordance with the requirements specified in § 63.696 of this subpart.

(2) Each closed-vent system that is used to comply with § 63.693(c)(1)(ii) of this subpart shall be inspected and monitored in accordance with the following requirements:

(i) The closed-vent system shall be visually inspected by the owner or operator to check for defects that could result in air emissions. Defects include, but are not limited to, visible cracks, holes, or gaps in ductwork or piping; loose connections; or broken or missing caps or other closure devices.

(ii) The owner or operator shall perform the inspections following installation of the closed-vent system and, thereafter, at least once every year.

(iii) In the event that a defect is detected, the owner or operator shall repair the defect in accordance with the requirements of paragraph (3) of this section.

(iv) The owner or operator shall maintain a record of the inspection in accordance with the requirements specified in § 63.696 of this subpart.

(3) The owner or operator shall repair all detected defects as follows:

(i) The owner or operator shall make first efforts at repair of the defect no later than 5 calendar days after detection and repair shall be completed as soon as possible but no later than 45 calendar days after detection.

(ii) The owner or operator shall maintain a record of the defect repair in accordance with the requirements specified in § 63.696 of this subpart.

(d) Owners and operators that use a transfer system equipped with a cover in accordance with the provisions of § 63.689(c)(1) of this subpart shall meet the following inspection requirements:

(1) The cover and its closure devices shall be visually inspected by the owner or operator to check for defects that could result in air emissions. Defects include, but are not limited to, visible cracks, holes, or gaps in the cover sections or between the cover and its mounting; broken, cracked, or otherwise damaged seals or gaskets on closure devices; and broken or missing hatches, access covers, caps, or other closure devices.

(2) The owner or operator shall perform the inspections following installation of the cover and, thereafter, at least once every year.

(3) In the event that a defect is detected, the owner or operator shall repair the defect in accordance with the requirements of paragraph (5) of this section.

(4) The owner or operator shall maintain a record of the inspection in accordance with the requirements specified in § 63.696 of this subpart.

(5) The owner or operator shall repair all detected defects as follows:

(i) The owner or operator shall make first efforts at repair of the defect no later than 5 calendar days after detection and repair shall be completed as soon as possible but no later than 45 calendar days after detection except as provided in paragraph (c)(5)(ii) of this section.

(ii) The owner or operator shall maintain a record of the defect repair in accordance with the requirements specified in § 63.696 of this subpart.

**§ 63.696 Recordkeeping requirements.**

(a) The owner or operator subject to this subpart shall comply with the recordkeeping requirements in § 63.10 under 40 CFR 63 subpart A—General Provisions that are applicable to this subpart as specified in Table 2 of this subpart.

(b) The owner or operator of a control device subject to this subpart shall maintain the records in accordance with the requirements of 40 CFR 63.10 of this part.

(c) [Reserved]

(d) Each owner or operator using an internal floating roof to comply with the tank control requirements specified in § 63.685(e) of this subpart or using an external floating roof to comply with the tank control requirements specified in § 63.685(f) of this subpart shall prepare and maintain the following records:

(1) Documentation describing the floating roof design and the dimensions of the tank.

(2) A record for each inspection required by § 63.695(b) of this subpart, as applicable to the tank, that includes the following information: a tank identification number (or other unique

identification description as selected by the owner or operator) and the date of inspection.

(3) The owner or operator shall record for each defect detected during inspections required by § 63.695(b) of this subpart the following information: the location of the defect, a description of the defect, the date of detection, and corrective action taken to repair the defect. In the event that repair of the defect is delayed in accordance with the provisions of § 63.695(b)(4) of this section, the owner or operator shall also record the reason for the delay and the date that completion of repair of the defect is expected.

(4) Owners and operators that use a tank equipped with an external floating roof in accordance with the provisions of § 63.685(f) of this subpart shall prepare and maintain records for each seal gap inspection required by § 63.695(b) describing the results of the seal gap measurements. The records shall include the date of that the measurements are performed, the raw data obtained for the measurements, and the calculations of the total gap surface area. In the event that the seal gap measurements do not conform to the specifications in § 63.695(b) of this subpart, the records shall include a description of the repairs that were made, the date the repairs were made, and the date the separator was emptied, if necessary.

(e) Each owner or operator using a fixed roof to comply with the tank control requirements specified in § 63.685(g) of this subpart shall prepare and maintain the following records:

(1) A record for each inspection required by § 63.695(b) of this subpart, as applicable to the tank, that includes the following information: a tank identification number (or other unique identification description as selected by the owner or operator) and the date of inspection.

(2) The owner or operator shall record for each defect detected during inspections required by § 63.695(b) of this subpart the following information: the location of the defect, a description of the defect, the date of detection, and corrective action taken to repair the defect. In the event that repair of the defect is delayed in accordance with

the provisions of § 63.695(b)(4) of this section, the owner or operator shall also record the reason for the delay and the date that completion of repair of the defect is expected.

(f) Each owner or operator using an enclosure to comply with the tank control requirements specified in § 63.685(i) of this subpart shall prepare and maintain records for the most recent set of calculations and measurements performed by the owner or operator to verify that the enclosure meets the criteria of a permanent total enclosure as specified in “Procedure T—Criteria for and Verification of a Permanent or Temporary Total Enclosure” under 40 CFR 52.741, Appendix B.

(g) An owner or operator shall record, on a semiannual basis, the information specified in paragraphs (g)(1) and (g)(2) of this section for those planned routine maintenance operations that would require the control device not to meet the requirements of § 63.693(d) through (h) of this subpart, as applicable.

(1) A description of the planned routine maintenance that is anticipated to be performed for the control device during the next 6 months. This description shall include the type of maintenance necessary, planned frequency of maintenance, and lengths of maintenance periods.

(2) A description of the planned routine maintenance that was performed for the control device during the previous 6 months. This description shall include the type of maintenance performed and the total number of hours during these 6 months that the control device did not meet the requirement of § 63.693 (d) through (h) of this subpart, as applicable, due to planned routine maintenance.

(h) An owner or operator shall record the information specified in paragraphs (h)(1) through (h)(3) of this section for those unexpected control device system malfunctions that would require the control device not to meet the requirements of § 63.693 (d) through (h) of this subpart, as applicable.

(1) The occurrence and duration of each malfunction of the control device system.

(2) The duration of each period during a malfunction when gases, vapors,

or fumes are vented from the waste management unit through the closed-vent system to the control device while the control device is not properly functioning.

(3) Actions taken during periods of malfunction to restore a malfunctioning control device to its normal or usual manner of operation.

#### **§ 63.697 Reporting requirements.**

(a) The owner or operator subject to this subpart shall comply with the notification requirements in § 63.9 and the reporting requirements in § 63.10 under 40 CFR 63 subpart A—General Provisions that are applicable to this subpart as specified in Table 2 of this subpart.

(b) The owner or operator of a control device used to meet the requirements of § 63.693 of this subpart shall submit the following reports to the Administrator:

(1) A Notification of Performance Tests specified in § 63.7 and § 63.9(g) of this part,

(2) Performance test reports specified in § 63.10(d)(2) of this part

(3) Startup, shutdown, and malfunction reports specified in § 63.10(d)(5) of this part,

(i) If actions taken by an owner or operator during a startup, shutdown, or malfunction of an affected source (including actions taken to correct a malfunction) are not completely consistent with the procedures specified in the source’s startup, shutdown, and malfunction plan specified in § 63.6(e)(3) of this part, the owner or operator shall state such information in the report. The startup, shutdown, or malfunction report shall consist of a letter, containing the name, title, and signature of the responsible official who is certifying its accuracy, that shall be submitted to the Administrator, and

(ii) Separate startup, shutdown, or malfunction reports are not required if the information is included in the report specified in paragraph (b)(6) of this section.

(4) A summary report specified in § 63.10(e)(3) of this part shall be submitted on a semi-annual basis (i.e., once every 6-month period).

(c) Each owner or operator using an internal floating roof or external floating roof to comply with the Tank Level 2 control requirements specified in §63.685(d) of this subpart shall notify the Administrator in advance of each inspection required under §63.695(b) of this subpart to provide the Administrator with the opportunity to have an observer present during the inspection. The owner or operator shall notify the Administrator of the date and location of the inspection as follows:

(1) Prior to each inspection to measure external floating roof seal gaps as required under §63.695(b) of this subpart, written notification shall be prepared and sent by the owner or operator so that it is received by the Administrator at least 30 calendar days before the date the measurements are scheduled to be performed.

(2) Prior to each visual inspection of an internal floating roof or external floating roof in a tank that has been emptied and degassed, written notification shall be prepared and sent by the owner or operator so that it is received by the Administrator at least 30 calendar days before refilling the tank ex-

cept when an inspection is not planned as provided for in paragraph (c)(3) of this section.

(3) When a visual inspection is not planned and the owner or operator could not have known about the inspection 30 calendar days before refilling the tank, the owner or operator shall notify the Administrator as soon as possible, but no later than 7 calendar days before refilling of the tank. This notification may be made by telephone and immediately followed by a written explanation for why the inspection is unplanned. Alternatively, written notification, including the explanation for the unplanned inspection, may be sent so that it is received by the Administrator at least 7 calendar days before refilling the tank.

**§63.698 Delegation of authority.**

(a) In delegating implementation and enforcement authority to a State under section 112(d) of the Act, the authority listed in paragraph (b) of this section shall be retained by the Administrator and not transferred to a State.

(b) Authority will not be delegated to States for §63.694 of this subpart.

TABLE 1 TO SUBPART DD.—LIST OF HAZARDOUS AIR POLLUTANTS (HAP) FOR SUBPART DD

| CAS No. <sup>a</sup> | Chemical name                                 | f <sub>m</sub> 305 |
|----------------------|---|--------------------|
| 75070                | Acetaldehyde                                  | 1.000              |
| 75058                | Acetonitrile                                  | 0.989              |
| 98862                | Acetophenone                                  | 0.314              |
| 107028               | Acrolein                                      | 1.000              |
| 107131               | Acrylonitrile                                 | 0.999              |
| 107051               | Allyl chloride                                | 1.000              |
| 71432                | Benzene (includes benzene in gasoline)        | 1.000              |
| 98077                | Benzotrifluoride (isomers and mixture)        | 0.958              |
| 100447               | Benzyl chloride                               | 1.000              |
| 92524                | Biphenyl                                      | 0.864              |
| 542881               | Bis(chloromethyl)ether <sup>b</sup>           | 0.999              |
| 75252                | Bromoform                                     | 0.998              |
| 106990               | 1,3-Butadiene                                 | 1.000              |
| 75150                | Carbon disulfide                              | 1.000              |
| 56235                | Carbon tetrachloride                          | 1.000              |
| 43581                | Carbonyl sulfide                              | 1.000              |
| 133904               | Chloramben                                    | 0.633              |
| 108907               | Chlorobenzene                                 | 1.000              |
| 67663                | Chloroform                                    | 1.000              |
| 107302               | Chloromethyl methyl ether <sup>b</sup>        | 1.000              |
| 126998               | Chloroprene                                   | 1.000              |
| 98828                | Cumene  | 1.000              |
| 94757                | 2,4-D, salts and esters                       | 0.167              |
| 334883               | Diazomethane <sup>c</sup>                     | 0.999              |
| 132649               | Dibenzofurans                                 | 0.967              |
| 96128                | 1,2-Dibromo-3-chloropropane                   | 1.000              |
| 106467               | 1,4-Dichlorobenzene(p)                        | 1.000              |
| 107062               | Dichloroethane (Ethylene dichloride)          | 1.000              |
| 111444               | Dichloroethyl ether (Bis(2-chloroethyl ether) | 0.757              |
| 542756               | 1,3-Dichloropropene                           | 1.000              |
| 79447                | Dimethyl carbamoyl chloride <sup>c</sup>      | 0.150              |
| 57147                | 1,1-Dimethyl hydrazine                        | 0.383              |
| 64675                | Diethyl sulfate                               | 0.0025             |

TABLE 1 TO SUBPART DD.—LIST OF HAZARDOUS AIR POLLUTANTS (HAP) FOR SUBPART DD—  
Continued

| CAS No. <sup>a</sup> | Chemical name                               | f <sub>m,305</sub> |
|----------------------|---|--------------------|
| 77781                | Dimethyl sulfate                            | 0.086              |
| 121697               | N,N-Dimethylaniline                         | 0.0008             |
| 51285                | 2,4-Dinitrophenol                           | 0.0077             |
| 121142               | 2,4-Dinitrotoluene                          | 0.0848             |
| 123911               | 1,4-Dioxane (1,4-Diethyleneoxide)           | 0.869              |
| 106898               | Epichlorohydrin (1-Chloro-2,3-epoxypropane) | 0.939              |
| 106887               | 1,2-Epoxybutane                             | 1.000              |
| 140885               | Ethyl acrylate                              | 1.000              |
| 100414               | Ethyl benzene                               | 1.000              |
| 75003                | Ethyl chloride (Chloroethane)               | 1.000              |
| 106934               | Ethylene dibromide (Dibromoethane)          | 0.999              |
| 107062               | Ethylene dichloride (1,2-Dichloroethane)    | 1.000              |
| 151564               | Ethylene imine (Aziridine)                  | 0.867              |
| 75218                | Ethylene oxide                              | 1.000              |
| 75343                | Ethylidene dichloride (1,1-Dichloroethane)  | 1.000              |
|                      | Glycol ethers <sup>d</sup>                  | (e)                |
| 118741               | Hexachlorobenzene                           | 0.97               |
| 87683                | Hexachlorobutadiene                         | 0.88               |
| 67721                | Hexachloroethane                            | 0.499              |
| 110543               | Hexane                                      | 1.000              |
| 78591                | Isophorone                                  | 0.506              |
| 58899                | Lindane (all isomers)                       | 1.000              |
| 67561                | Methanol                                    | 0.855              |
| 74839                | Methyl bromide (Bromomethane)               | 1.000              |
| 74873                | Methyl chloride (Chloromethane)             | 1.000              |
| 71556                | Methyl chloroform (1,1,1-Trichloroethane)   | 1.000              |
| 78933                | Methyl ethyl ketone (2-Butanone)            | 0.990              |
| 74884                | Methyl iodide (Iodomethane)                 | 1.000              |
| 108101               | Methyl isobutyl ketone (Hexone)             | 0.979              |
| 624839               | Methyl isocyanate                           | 1.000              |
| 80626                | Methyl methacrylate                         | 0.999              |
| 1634044              | Methyl tert butyl ether                     | 1.000              |
| 75092                | Methylene chloride (Dichloromethane)        | 1.000              |
| 91203                | Naphthalene                                 | 0.994              |
| 98953                | Nitrobenzene                                | 0.394              |
| 79469                | 2-Nitropropane                              | 0.989              |
| 82688                | Pentachloronitrobenzene (Quintobenzene)     | 0.839              |
| 87865                | Pentachlorophenol                           | 0.0898             |
| 75445                | Phosgene <sup>e</sup>                       | 1.000              |
| 123386               | Propionaldehyde                             | 0.999              |
| 78875                | Propylene dichloride (1,2-Dichloropropane)  | 1.000              |
| 75569                | Propylene oxide                             | 1.000              |
| 75558                | 1,2-Propylenimine (2-Methyl aziridine)      | 0.945              |
| 100425               | Styrene                                     | 1.000              |
| 96093                | Styrene oxide                               | 0.830              |
| 79345                | 1,1,2,2-Tetrachloroethane                   | 0.999              |
| 127184               | Tetrachloroethylene (Perchloroethylene)     | 1.000              |
| 108883               | Toluene                                     | 1.000              |
| 95534                | o-Toluidine                                 | 0.152              |
| 120821               | 1,2,4-Trichlorobenzene                      | 1.000              |
| 71556                | 1,1,1-Trichloroethane (Methyl chloroform)   | 1.000              |
| 79005                | 1,1,2-Trichloroethane (Vinyl trichloride)   | 1.000              |
| 79016                | Trichloroethylene                           | 1.000              |
| 95954                | 2,4,5-Trichlorophenol                       | 0.108              |
| 88062                | 2,4,6-Trichlorophenol                       | 0.132              |
| 121448               | Triethylamine                               | 1.000              |
| 540841               | 2,2,4-Trimethylpentane                      | 1.000              |
| 108054               | Vinyl acetate                               | 1.000              |
| 593602               | Vinyl bromide                               | 1.000              |
| 75014                | Vinyl chloride                              | 1.000              |
| 75354                | Vinylidene chloride (1,1-Dichloroethylene)  | 1.000              |
| 1330207              | Xylenes (isomers and mixture)               | 1.000              |
| 95476                | o-Xylenes                                   | 1.000              |
| 108383               | m-Xylenes                                   | 1.000              |
| 106423               | p-Xylenes                                   | 1.000              |

**Notes:**f<sub>m,305</sub>=Method 305 fraction measure factor

a. CAS numbers refer to the Chemical Abstracts Services registry number assigned to specific compounds, isomers, or mixtures of compounds.

b. Denotes a HAP that hydrolyzes quickly in water, but the hydrolysis products are also HAP chemicals.

c. Denotes a HAP that may react violently with water, exercise caustic is an expected analyte.

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d. Denotes a HAP that hydrolyzes slowly in water.  
 e. Several glycol ethers meet the criteria used to select HAP for the purposes of this subpart. The  $f_{m,305}$  factors for some of the more common glycol ethers are listed below:  
 Ethylene glycol dimethyl ether ( $f_{m,305}=0.861$ )  
 Ethylene glycol monoethyl ether acetate ( $f_{m,305}=0.0887$ )  
 Ethylene glycol monomethyl ether acetate ( $f_{m,305}=0.0926$ )  
 Diethylene glycol diethyl ether ( $f_{m,305}=0.216$ )

TABLE 2 TO SUBPART DD.—APPLICABILITY OF PARAGRAPHS IN 40 CFR 63 SUBPART A, GENERAL PROVISIONS, TO SUBPART DD

| Subpart A reference         | Applies to subpart DD | Comment  |  |
|-----------------------------|-----------------------|--|--|
| 63.1(a)(1) .....            | Yes.                  |  |  |
| 63.1(a)(2) .....            | Yes.                  |  |  |
| 63.1(a)(3) .....            | Yes.                  |  |  |
| 63.1(a)(4) .....            | No .....              | Subpart DD (this table) specifies applicability of each paragraph in subpart A to subpart DD.  |  |
| 63.1(a)(5)–63.1(a)(9) ..... | No.                   |  |  |
| 63.1(a)(10) .....           | Yes.                  |  |  |
| 63.1(a)(11) .....           | Yes.                  |  |  |
| 63.1(a)(12) .....           | Yes.                  |  |  |
| 63.1(a)(13) .....           | Yes.                  |  |  |
| 63.1(a)(14) .....           | Yes.                  |  |  |
| 63.1(b)(1) .....            | No .....              |  | Subpart DD specifies its own applicability.                              |
| 63.1(b)(2) .....            | Yes.                  |  |  |
| 63.1(b)(3) .....            | No.                   |  |  |
| 63.1(c)(1) .....            | No .....              |  | Subpart DD explicitly specifies requirements that apply.                 |
| 63.1(c)(2) .....            | No .....              |  |  |
| 63.1(c)(3) .....            | No.                   |  | Area sources are not subject to subpart DD.                              |
| 63.1(c)(4) .....            | Yes.                  |  |  |
| 63.1(c)(5) .....            | Yes .....             |  |  |
| 63.1(d) .....               | No.                   | Except that sources are not required to submit notifications overridden by this table.   |  |
| 63.1(e) .....               | No.                   |  |  |
| 63.2 .....                  | Yes .....             |  |  |
| 63.3 .....                  | Yes.                  | § 63.681 of subpart DD specifies that if the same term is defined in subparts A and DD, it shall have the meaning given in subpart DD. |  |
| 63.4(a)(1)–63.4(a)(3) ..... | Yes.                  |  |  |
| 63.4(a)(4) .....            | No .....              |  |  |
| 63.4(a)(5) .....            | Yes.                  | Reserved.  |  |
| 63.4(b) .....               | Yes.                  |  |  |
| 63.4(c) .....               | Yes.                  |  |  |
| 63.5(a)(1) .....            | Yes .....             |  |  |
| 63.5(a)(2) .....            | Yes.                  | Except replace term “source” and “stationary source” in § 63.5(a)(1) of subpart A with “affected source.”                              |  |
| 63.5(b)(1) .....            | Yes.                  |  |  |
| 63.5(b)(2) .....            | No .....              |  |  |
| 63.5(b)(3) .....            | Yes.                  | Reserved.  |  |
| 63.5(b)(4) .....            | Yes .....             |  |  |
| 63.5(b)(5) .....            | Yes.                  |  |  |
| 63.5(b)(6) .....            | Yes.                  | Except the cross-reference to § 63.9(b) is changed to § 63.9(b)(4) and (5). Subpart DD overrides § 63.9(b)(2) and (b)(3).              |  |
| 63.5(c) .....               | No .....              |  |  |
| 63.5(d)(1)(i) .....         | Yes.                  |  |  |
| 63.5(d)(1)(ii) .....        | Yes.                  |  |  |
| 63.5(d)(1)(iii) .....       | Yes.                  |  |  |
| 63.5(d)(2) .....            | No.                   |  |  |
| 63.5(d)(3) .....            | Yes.                  |  |  |
| 63.5(d)(4) .....            | Yes.                  |  |  |
| 63.5(e) .....               | Yes.                  |  |  |
| 63.5(f)(1) .....            | Yes.                  |  |  |
| 63.5(f)(2) .....            | Yes.                  |  |  |
| 63.6(a) .....               | Yes.                  |  |  |
| 63.6(b)(1) .....            | No .....              |  | Subpart DD specifies compliance dates for sources subject to subpart DD. |
| 63.6(b)(2) .....            | No.                   |  |  |
| 63.6(b)(3) .....            | Yes.                  |  |  |
| 63.6(b)(4) .....            | No .....              | May apply when standards are proposed under section 112(f) of the Clean Air Act.   |  |
| 63.6(b)(5) .....            | No .....              |  |  |
| 63.6(b)(6) .....            | No.                   |  |  |
| 63.6(b)(7) .....            | No.                   | § 63.697 of subpart DD includes notification requirements.   |  |
| 63.6(c)(1) .....            | No .....              |  |  |
| 63.6(c)(1) .....            | No .....              | § 63.680 of subpart DD specifies the compliance date.  |  |

TABLE 2 TO SUBPART DD.—APPLICABILITY OF PARAGRAPHS IN 40 CFR 63 SUBPART A, GENERAL PROVISIONS, TO SUBPART DD—Continued

| Subpart A reference               | Applies to subpart DD | Comment  |
|-----------------------------------|-----------------------|--|
| 63.6(c)(2)–63.6(c)(4)             | No.                   |  |
| 63.6(c)(5)                        | Yes.                  |  |
| 63.6(d)                           | No.                   |  |
| 63.6(e)                           | Yes.                  |  |
| 63.6(f)(1)                        | Yes.                  |  |
| 63.6(f)(2)(i)                     | Yes.                  |  |
| 63.6(f)(2)(ii)                    | Yes                   | Subpart DD specifies the use of monitoring data in determining compliance with subpart DD. |
| 63.6(f)(2)(iii) (A), (B), and (C) | Yes.                  |  |
| 63.6(f)(2)(iii) (D)               | No.                   |  |
| 63.6(f)(2)(iv)                    | Yes.                  |  |
| 63.6(f)(2)(v)                     | Yes.                  |  |
| 63.6(f)(3)                        | Yes.                  |  |
| 63.6(g)                           | Yes.                  |  |
| 63.6(h)                           | No                    | Subpart DD does not require opacity and visible emission standards.                        |
| 63.6(i)                           | Yes                   | Except for §63.6(i)(15), which is reserved.  |
| 63.6(j)                           | Yes.                  |  |
| 63.7(a)(1)                        | No                    | Subpart DD specifies required testing and compliance demonstration procedures.             |
| 63.7(a)(2)                        | Yes.                  |  |
| 63.7(a)(3)                        | Yes.                  |  |
| 63.7(b)                           | No.                   |  |
| 63.7(c)                           | No.                   |  |
| 63.7(d)                           | Yes.                  |  |
| 63.7(e)(1)                        | Yes.                  |  |
| 63.7(e)(2)                        | Yes.                  |  |
| 63.7(e)(3)                        | No                    | Subpart DD specifies test methods and procedures.  |
| 63.7(e)(4)                        | Yes.                  |  |
| 63.7(f)                           | No                    | Subpart DD specifies applicable methods and provides alternatives.                         |
| 63.7(g)                           | Yes.                  |  |
| 63.7(h)(1)                        | Yes.                  |  |
| 63.7(h)(2)                        | Yes.                  |  |
| 63.7(h)(3)                        | Yes.                  |  |
| 63.7(h)(4)                        | No.                   |  |
| 63.7(h)(5)                        | Yes.                  |  |
| 63.8(a)                           | No.                   |  |
| 63.8(b)(1)                        | Yes.                  |  |
| 63.8(b)(2)                        | No                    | Subpart DD specifies locations to conduct monitoring.                                      |
| 63.8(b)(3)                        | Yes.                  |  |
| 63.8(c)(1)(i)                     | Yes.                  |  |
| 63.8(c)(1)(ii)                    | Yes.                  |  |
| 63.8(c)(1)(iii)                   | Yes.                  |  |
| 63.8(c)(2)                        | Yes.                  |  |
| 63.8(c)(3)                        | Yes.                  |  |
| 63.8(c)(4)                        | No                    | Subpart DD specifies monitoring frequency  |
| 63.8(c)(5)–63.8(c)(8)             | No.                   |  |
| 63.8(d)                           | No.                   |  |
| 63.8(e)                           | No.                   |  |
| 63.8(f)(1)                        | Yes.                  |  |
| 63.8(f)(2)                        | Yes.                  |  |
| 63.8(f)(3)                        | Yes.                  |  |
| 63.8(f)(4)(i)                     | Yes.                  |  |
| 63.8(f)(4)(ii)                    | Yes.                  |  |
| 63.8(f)(4)(iii)                   | No.                   |  |
| 63.8(f)(5)(i)                     | Yes.                  |  |
| 63.8(f)(5)(ii)                    | No.                   |  |
| 63.8(f)(5)(iii)                   | Yes.                  |  |
| 63.8(f)(6)                        | Yes.                  |  |
| 63.8(g)                           | Yes.                  |  |
| 63.9(a)                           | Yes.                  |  |
| 63.9(b)(1)(i)                     | Yes.                  |  |
| 63.9(b)(1)(ii)                    | No.                   |  |
| 63.9(b)(2)                        | Yes.                  |  |
| 63.9(b)(3)                        | No.                   |  |
| 63.9(b)(4)                        | Yes.                  |  |
| 63.9(b)(5)                        | Yes.                  |  |
| 63.9(c)                           | Yes.                  |  |
| 63.9(d)                           | Yes.                  |  |
| 63.9(e)                           | No.                   |  |
| 63.9(f)                           | No.                   |  |

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TABLE 2 TO SUBPART DD.—APPLICABILITY OF PARAGRAPHS IN 40 CFR 63 SUBPART A, GENERAL PROVISIONS, TO SUBPART DD—Continued

| Subpart A reference           | Applies to subpart DD | Comment |
|-------------------------------|-----------------------|---------|
| 63.9(g) .....                 | No.                   |         |
| 63.9(h) .....                 | Yes.                  |         |
| 63.9(i) .....                 | Yes.                  |         |
| 63.9(j) .....                 | No.                   |         |
| 63.10(a) .....                | Yes.                  |         |
| 63.10(b)(1) .....             | Yes.                  |         |
| 63.10(b)(2)(i) .....          | Yes.                  |         |
| 63.10(b)(2)(ii) .....         | Yes.                  |         |
| 63.10(b)(2)(iii) .....        | No.                   |         |
| 63.10(b)(2)(iv) .....         | Yes.                  |         |
| 63.10(b)(2)(v) .....          | Yes.                  |         |
| 63.10(b)(2) (vi)–(ix) .....   | No.                   |         |
| 63.10(b)(2)(x) .....          | Yes.                  |         |
| 63.10(b)(2) (xii)–(xiv) ..... | No.                   |         |
| 63.10(b)(3) .....             | No.                   |         |
| 63.10(c) .....                | No.                   |         |
| 63.10(d)(1) .....             | No.                   |         |
| 63.10(d)(2) .....             | Yes.                  |         |
| 63.10(d)(3) .....             | No.                   |         |
| 63.10(d)(4) .....             | Yes.                  |         |
| 63.10(d)(5)(i) .....          | Yes.                  |         |
| 63.10(d)(5)(ii) .....         | Yes.                  |         |
| 63.10(e) .....                | No.                   |         |
| 63.10(f) .....                | Yes.                  |         |
| 63.11–63.15 .....             | Yes.                  |         |

**Note:** Wherever subpart A specifies “postmark” dates, submittals may be sent by methods other than the U.S. Mail (e.g., by fax or courier). Submittals shall be sent by the specified dates, but a postmark is not required.

TABLE 3 TO SUBPART DD.—TANK CONTROL LEVELS FOR TANKS AT EXISTING AFFECTED SOURCES AS REQUIRED BY 40 CFR 63.685(b)(1)

| Tank design capacity (cubic meters)   | Maximum HAP vapor pressure of off-site material managed in tank (kilopascals) | Tank control level |
|---|---|--------------------|
| Design capacity less than 75 m <sup>3</sup> .....   | Maximum HAP vapor pressure less than 76.6 kPa .....                           | Level 1.           |
|   | Maximum HAP vapor pressure less than 27.6 kPa .....                           | Level 1.           |
| Design capacity equal to or greater than 75 m <sup>3</sup> and less than 151 m <sup>3</sup> . | Maximum HAP vapor pressure equal to or greater than 27.6 kPa.                 | Level 2.           |
|   | Maximum HAP vapor pressures less than 5.2 kPa .....                           | Level 1.           |
| Design capacity equal to or greater than 151 m <sup>3</sup> .....                             | Maximum HAP vapor pressure equal to or greater than 5.2 kPa.                  | Level 2.           |

TABLE 4 TO SUBPART DD.—TANK CONTROL LEVELS FOR TANKS AT NEW AFFECTED SOURCES AS REQUIRED BY 40 CFR 63.685(b)(2)

| Tank design capacity (cubic meters)   | Maximum HAP vapor pressure of off-site material managed in tank (kilopascals) | Tank control level |
|---|---|--------------------|
| Design capacity less than 38 m <sup>3</sup> .....   | Maximum HAP vapor pressure less than 76.6 kPa .....                           | Level 1.           |
|   | Maximum HAP vapor pressure less than 13.1 kPa .....                           | Level 1.           |
| Design capacity equal to or greater than 38 m <sup>3</sup> and less than 151 m <sup>3</sup> . | Maximum HAP vapor pressure equal to or greater than 13.1 kPa.                 | Level 2.           |
|   | Maximum HAP vapor pressure less than 0.7 kPa .....                            | Level 1.           |
| Design capacity equal to or greater than 151 m <sup>3</sup> .....                             | Maximum HAP vapor pressure equal to or greater than 0.7 kPa.                  | Level 2.           |

### Subpart EE—National Emission Standards for Magnetic Tape Manufacturing Operations

SOURCE: 59 FR 64596, Dec. 15, 1994, unless otherwise noted.

#### § 63.701 Applicability.

(a) Except as specified in paragraph (b) of this section, the provisions of this subpart apply to:

(1) Each new and existing magnetic tape manufacturing operation located at a major source of hazardous air pollutant (HAP) emissions; and

(2) A magnetic tape manufacturing operation for which the owner or operator chooses to use the provisions of § 63.703(b) and (h) to obtain a Federally enforceable limit on its potential to emit HAP.

EXPLANATORY NOTE: A reason the owner or operator would make the choice described in paragraph (a)(2) of this section is if the plant site, without this limit, would be a major source. The owner or operator could use this limit, which would establish the potential to emit from magnetic tape manufacturing operations, in conjunction with the potential to emit from the other HAP emission points at the stationary source, to be an area source. Note, however, that an owner or operator is not required to use the provisions in § 63.703(b) and (h) to determine the potential to emit HAP from magnetic tape manufacturing operations.

(b) This subpart does not apply to the following:

(1) Research or laboratory facilities; and

(2) Any coating operation that produces a quantity of magnetic tape that is 1 percent or less of total production (in terms of total square footage coated) from that coating operation in any 12-month period.

(c) The affected source subject to this standard is the magnetic tape manufacturing operation, as defined in § 63.702.

(d) An owner or operator of an existing affected source subject to the provisions of this subpart shall comply according to the following schedule:

(1) Within 3 years after the effective date of the standard, if the owner or operator is required to install a new add-on air pollution control device to

meet the requirements of § 63.703(c) or (g); or

(2) Within 2 years after the effective date of the standard, if a new add-on air pollution control device is not needed to comply with § 63.703(c) or (g) of these standards.

(e) The compliance date for an owner or operator of a new affected source subject to the provisions of this subpart is immediately upon startup of the affected source.

(f) The provisions of this subpart apply during periods of startup and shutdown, and whenever magnetic tape manufacturing operations are taking place.

(g) Owners or operators of affected sources subject to the provisions of this subpart shall also comply with the requirements of subpart A as identified in Table 1, according to the applicability of subpart A to such sources.

(h) In any title V permit for an affected source, all research or laboratory facilities that are exempt from the requirements of this subpart shall be clearly identified.

#### § 63.702 Definitions.

(a) All terms used in this subpart that are not defined below have the meaning given to them in the Clean Air Act and in subpart A of this part.

*Add-on air pollution control device* means equipment installed at the end of a process vent exhaust stack or stacks that reduces the quantity of a pollutant that is emitted to the air. The device may destroy or secure the pollutant for subsequent recovery. Examples are incinerators, condensers, carbon adsorbers, and biofiltration units. Transfer equipment and ductwork are not considered in and of themselves add-on air pollution control devices.

*Bag slitter* means a device for enclosed transfer of particulates. A bag of raw materials is placed in a hopper, the hopper is closed, and an internal mechanism slits the bag, releasing the particulates into either a closed conveyor that feeds the mix preparation equipment or into the mix preparation equipment itself.

*Base substrate* means the surface, such as plastic or paper, to which a coating is applied.

*Capture efficiency* means the fraction of all organic vapors or other pollutants generated by a process that are directed to an add-on air pollution control device.

*Capture device* means a hood, enclosed room, or other means of collecting HAP vapors or other pollutants into a duct that exhausts to an add-on air pollution control device.

*Carbon adsorber vessel* means one vessel in a series of vessels in a carbon adsorption system that contains carbon and is used to remove gaseous pollutants from a gaseous emission source.

*Car seal* means a seal that is placed on a device that is used either to open a closed valve or close an opened valve so that the position of the valve cannot be changed without breaking the seal.

*Closed system for flushing fixed lines* means a system in which the line to be flushed is disconnected from its original position and connected to two closed containers, one that contains cleaning solvent and one that is empty. Solvent is flushed from the container with cleaning solvent, through the line, and into the empty containers.

*Coater or coating applicator* means the apparatus used to apply a coating to a continuous base substrate.

*Coating application* means the process by which the coating mix is applied to the base substrate.

*Coating operation* means any coater, flashoff area, and drying oven located between a base substrate unwind station and a base substrate rewind station that coats a continuous base substrate.

*Control device efficiency* means the ratio of the emissions collected or destroyed by an add-on air pollution control device to the total emissions that are introduced to the control device, expressed as a percentage.

*Day* means a 24-consecutive-hour period.

*Drying oven* means a chamber that uses heat to bake, cure, polymerize, or dry a surface coating; if the coating contains volatile solvents, the volatile portion is evaporated in the oven.

*Enclosed transfer method* means a particulate HAP transfer method that uses an enclosed system to prevent particulate HAP from entering the atmosphere as dust. Equipment used for this

purpose may include vacuum injection systems or other mechanical transfer systems, bag slitters, or supersacks.

*Equivalent diameter* means four times the area of an opening divided by its perimeter.

*Facility* means all contiguous or adjoining property that is under common ownership or control in which magnetic tape manufacturing is performed. The definition includes properties that are separated only by a road or other public right-of-way.

*Flashoff area* means the portion of a coating operation between the coater and the drying oven where solvent begins to evaporate from the coated base substrate.

*Flushing of fixed lines* means the flushing of solvent through lines that are typically fixed and are not associated with the cleaning of a tank, such as the line from the mix room to the coater.

*Freeboard ratio* means the vertical distance from the surface of the liquid to the top of the sink or tank (freeboard height) divided by the smaller of the length or width of the sink or tank evaporative area.

*Magnetic coatings* means coatings applied to base substrates to make magnetic tape. Components of magnetic coatings may include: Magnetic particles, binders, dispersants, conductive pigments, lubricants, solvents, and other additives.

*Magnetic particles* means particles in the coating mix that have magnetic properties. Examples of magnetic particles used in magnetic tape manufacturing are:  $\gamma$ -oxide, doped iron oxides, chromium dioxide, barium ferrite, and metallic particles that usually consist of elemental iron, cobalt, and/or nickel.

*Magnetic tape* means any flexible base substrate that is covered on one or both sides with a coating containing magnetic particles and that is used for audio recording, video recording, or any type of information storage.

*Magnetic tape manufacturing operation* means all of the emission points within a magnetic tape manufacturing facility that are specifically associated with the manufacture of magnetic tape. These include, but are not limited to:

- (1) Solvent storage tanks;

- (2) Mix preparation equipment;
- (3) Coating operations;
- (4) Waste handling devices;
- (5) Particulate transfer operations;
- (6) Wash sinks for cleaning removable parts;
- (7) Cleaning involving the flushing of fixed lines;
- (8) Wastewater treatment systems; and
- (9) Condenser vents associated with distillation and stripping columns in the solvent recovery area, but not including the vent on a condenser that is used as the add-on air pollution control device.

*Mill* means the pressurized equipment that uses the dispersing action of beads, combined with the high shearing forces of the centrifugal mixing action, to disperse the aggregates of magnetic particles thoroughly without reducing particle size.

*Mix preparation equipment* means the vessels, except for mills, used to prepare the magnetic coating.

*Natural draft opening* means any opening in a room, building, or total enclosure that remains open during operation of the facility and that is not connected to a duct in which a fan is installed. The rate and direction of the natural draft through such an opening is a consequence of the difference in pressures on either side of the wall containing the opening.

*Nonregenerative carbon adsorber* means a carbon adsorber vessel in which the spent carbon bed does not undergo carbon regeneration in the adsorption vessel.

*Operating parameter value* means a minimum or maximum value established for a control device or process parameter that, if achieved by itself or in combination with one or more other operating parameter values, determines that an owner or operator has complied with an applicable emission limitation or standard.

*Overall HAP control efficiency* means the total efficiency of the control system, determined by the product of the capture efficiency and the control device efficiency.

*Particulate* means any material, except uncombined water, that exists as liquid or solid particles such as dust, smoke, mist, or fumes at standard con-

ditions (760 millimeters of mercury, 0 degrees celsius).

*Particulate HAP transfer* means the introduction of a particulate HAP into other dry ingredients or a liquid solution.

*Removable parts cleaning* means cleaning of parts that have been moved from their normal position to a wash tank or sink containing solvent for the purpose of cleaning.

*Research or laboratory facility* means any stationary source whose primary purpose is to conduct research and development to develop new processes and products, where such source is operated under the close supervision of technically trained personnel and is not engaged in the manufacture of products for commercial sale in commerce, except in a de minimis manner.

*Separator* means a device in the wastewater treatment system in which immiscible solvent is physically separated from the water with which it is mixed.

*Solvent storage tanks* means the stationary tanks that are associated with magnetic tape operations and that store virgin solvent, spent solvent, cleaning solvent, solvent at any stage of the solvent recovery process, or any volatile compound. They do not serve a process function.

*Solvent recovery area* means the collection of devices used to remove HAP emissions from process air, to recover the HAP, and to purify the HAP. Typically, this area contains a control device such as a carbon adsorber or condenser, the wastewater treatment system, and the distillation columns.

*Solvent recovery device* means, for the purposes of this subpart, an add-on air pollution control device in which HAP is captured rather than destroyed. Examples include carbon adsorption systems and condensers.

*Supersack* means a container of particulate from the manufacturer or supplier with attached feed tubes and that is used to transfer particulate under the following conditions: the feed tubes are attached directly to the mix preparation equipment, the attachment interface is sealed, and all openings on the mix transfer equipment are closed to the atmosphere.

*Temporary total enclosure* means a total enclosure that is constructed for the sole purpose of measuring the fugitive emissions from an affected source. A temporary total enclosure must be constructed and ventilated (through stacks suitable for testing) so that it has minimal impact on the performance of the permanent capture system. A temporary total enclosure will be assumed to achieve total capture of fugitive emissions if it conforms to the requirements found in §63.705(c)(4)(i) and if all natural draft openings are at least four duct or hood equivalent diameters away from each exhaust duct or hood. Alternatively, the owner or operator may apply to the Administrator for approval of a temporary enclosure on a case-by-case basis.

*Total enclosure* means a structure that is constructed around a gaseous emission source so that all gaseous pollutants emitted from the source are collected and ducted through a control device, such that 100 percent capture efficiency is achieved. There are no fugitive emissions from a total enclosure. The only openings in a total enclosure are forced makeup air and exhaust ducts and any natural draft openings such as those that allow raw materials to enter and exit the enclosure for processing. All access doors or windows are closed during routine operation of the enclosed source. Brief, occasional openings of such doors or windows to accommodate process equipment adjustments are acceptable, but if such openings are routine or if an access door remains open during the entire operation, the access door must be considered a natural draft opening. The average inward face velocity across the natural draft openings of the enclosure must be calculated including the area of such access doors. The drying oven itself may be part of the total enclosure. A permanent enclosure that meets the requirements found in §63.705(c)(4)(i) is a total enclosure.

*Utilize* means the use of HAP that is delivered to mix preparation equipment for the purpose of formulating coatings, the use of any other HAP (e.g., dilution solvent) that is added at any point in the manufacturing process, and the use of any HAP for cleaning activities. Alternatively, annual

HAP utilization can be determined as net usage; that is, the HAP inventory at the beginning of a 12-month period, plus the amount of HAP purchased during the 12-month period, minus the amount of HAP in inventory at the end of a 12-month period.

*Vacuum injection system* means a system in which a vacuum draws particulate from a storage container into a closed system that transfers particulates into the mix preparation equipment.

*Volatile organic compound (VOC)* means any organic compound that participates in atmospheric photochemical reactions or that is measured by EPA Test Methods 18, 24, or 25A in appendix A of part 60 or an alternative test method as defined in §63.2.

*Volatile organic hazardous air pollutant (VOHAP) concentration* means the concentration of an individually-specified organic HAP in a wastewater discharge that is measured by Method 305 of appendix A to 40 CFR part 63.

*Waste handling* means processing or treatment of waste (liquid or solid) that is generated as a by-product of either the magnetic tape production process or cleaning operations.

*Waste handling device* means equipment that is used to separate solvent from solid waste (e.g., filter dryers) or liquid waste (e.g., pot stills and thin film evaporators). The solvents are recovered by heating, condensing, and collection.

*Wastewater discharge* means the water phase that is discharged from the separator in a wastewater treatment system.

*Wastewater treatment system* means the assortment of devices in which the solvent/water mixture, generated when the carbon bed in the carbon adsorber is desorbed by steam, is treated to remove residual organics in the water.

(b) The nomenclature used in this subpart is defined when presented or has the meaning given below:

(1)  $A_k$  = the area of each natural draft opening (k) in a total enclosure, in square meters.

(2)  $C_{aj}$  = the concentration of HAP or VOC in each gas stream (j) exiting the emission control device, in parts per million by volume.

(3)  $C_{bi}$  = the concentration of HAP or VOC in each gas stream (i) entering the emission control device, in parts per million by volume.

(4)  $C_{di}$  = the concentration of HAP or VOC in each gas stream (i) entering the emission control device from the affected source, in parts per million by volume.

(5)  $C_{ik}$  = the concentration of HAP or VOC in each uncontrolled gas stream (k) emitted directly to the atmosphere from the affected source, in parts per million by volume.

(6)  $C_{gv}$  = the concentration of HAP or VOC in each uncontrolled gas stream entering each individual carbon adsorber vessel (v), in parts per million by volume. For the purposes of calculating the efficiency of the individual carbon adsorber vessel,  $C_{gv}$  may be measured in the carbon adsorption system's common inlet duct prior to the branching of individual inlet ducts to the individual carbon adsorber vessels.

(7)  $C_{hv}$  = the concentration of HAP or VOC in the gas stream exiting each individual carbon adsorber vessel (v), in parts per million by volume.

(8)  $E$  = the control device efficiency achieved for the duration of the emission test (expressed as a fraction).

(9)  $F$  = the HAP or VOC emission capture efficiency of the HAP or VOC capture system achieved for the duration of the emission test (expressed as a fraction).

(10)  $FV$  = the average inward face velocity across all natural draft openings in a total enclosure, in meters per hour.

(11)  $G$  = the calculated mass of HAP per volume of coating solids (in kilograms per liter) contained in a batch of coating.

(12)  $H_v$  = the individual carbon adsorber vessel (v) efficiency achieved for the duration of the emission test (expressed as a fraction).

(13)  $H_{sys}$  = the efficiency of the carbon adsorption system calculated when each carbon adsorber vessel has an individual exhaust stack (expressed as a fraction).

(14)  $L_{si}$  = the volume fraction of solids in each batch of coating (i) applied as determined from the formulation records at the affected source.

(15)  $M_{ci}$  = the total mass in kilograms of each batch of coating (i) applied, or of each coating applied at an affected coating operation during a 7-day period, as appropriate, as determined from records at the affected source. This quantity shall be determined at a time and location in the process after all ingredients (including any dilution solvent) have been added to the coating, or if ingredients are added after the mass of the coating has been determined, appropriate adjustments shall be made to account for them.

(16)  $M_r$  = the total mass in kilograms of HAP or VOC recovered for a 7-day period.

(17)  $Q_{aj}$  = the volumetric flow rate of each gas stream (j) exiting the emission control device in either dry standard cubic meters per hour when EPA Method 18 in appendix A of part 60 is used to measure HAP or VOC concentration or in standard cubic meters per hour (wet basis) when EPA Method 25A is used to measure HAP or VOC concentration.

(18)  $Q_{bi}$  = the volumetric flow rate of each gas stream (i) entering the emission control device, in dry standard cubic meters per hour when EPA Method 18 is used to measure HAP or VOC concentration or in standard cubic meters per hour (wet basis) when EPA Method 25A is used to measure HAP or VOC concentration.

(19)  $Q_{di}$  = the volumetric flow rate of each gas stream (i) entering the emission control device from the affected source in either dry standard cubic meters per hour when EPA Method 18 is used to measure HAP or VOC concentration or in standard cubic meters per hour (wet basis) when EPA Method 25A is used to measure HAP or VOC concentration.

(20)  $Q_{ik}$  = the volumetric flow rate of each uncontrolled gas stream (k) emitted directly to the atmosphere from the affected source in either dry standard cubic meters per hour when EPA Method 18 is used to measure HAP or VOC concentration or in standard cubic meters per hour (wet basis) when EPA Method 25A is used to measure HAP or VOC concentration.

(21)  $Q_{gv}$  = the volumetric flow rate of each gas stream entering each individual carbon adsorber vessel (v) in either

dry standard cubic meters per hour when EPA Method 18 is used to measure HAP or VOC concentration or in standard cubic meters per hour (wet basis) when EPA Method 25A is used to measure HAP or VOC concentration. For purposes of calculating the efficiency of the individual carbon adsorber vessel, the value of  $Q_{gv}$  can be assumed to equal the value of  $Q_{hv}$  measured for that carbon adsorber vessel.

(22)  $Q_{hv}$  = the volumetric flow rate of each gas stream exiting each individual carbon adsorber vessel (v) in either dry standard cubic meters per hour when EPA Method 18 is used to measure HAP or VOC concentration or in standard cubic meters per hour (wet basis) when EPA Method 25A is used to measure HAP or VOC concentration.

(23)  $Q_{in i}$  = the volumetric flow rate of each gas stream (i) entering the total enclosure through a forced makeup air duct in standard cubic meters per hour (wet basis).

(24)  $Q_{out j}$  = the volumetric flow rate of each gas stream (j) exiting the total enclosure through an exhaust duct or hood in standard cubic meters per hour (wet basis).

(25)  $R$  = the overall HAP or VOC emission reduction achieved for the duration of the emission test (expressed as a percentage).

(26)  $RS_i$  = the total mass in kilograms of HAP or VOC retained in the coated substrate after oven drying for a given magnetic tape product.

(27)  $V_{ci}$  = the total volume in liters of each batch of coating (i) applied as determined from records at the affected source.

(28)  $W_{oi}$  = the weight fraction of HAP or VOC in each batch of coating (i) applied, or of each coating applied at an affected coating operation during a 7-day period, as appropriate, as determined by EPA Method 24 or formulation data. This value shall be determined at a time and location in the process after all ingredients (including any dilution solvent) have been added to the coating, or if ingredients are added after the weight fraction of HAP or VOC in the coating has been determined, appropriate adjustments shall be made to account for them.

### § 63.703 Standards.

(a) Each owner or operator of any affected source that is subject to the requirements of this subpart shall comply with the requirements of this subpart on and after the compliance dates specified in § 63.701.

(b)(1) The owner or operator subject to § 63.701(a)(2) shall determine limits on the amount of HAP utilized (see definition) in the magnetic tape manufacturing operation as the values for the potential to emit HAP from the magnetic tape manufacturing operation.

(2) The limits on the amount of HAP utilized in the magnetic tape manufacturing operations shall be determined in the following manner.

(i) The potential to emit each HAP from each emission point at the stationary source, other than those from magnetic tape manufacturing operations, shall be calculated and converted to the units of Mg/yr (or tons/yr).

(ii) The limits on the HAP utilized in the magnetic tape manufacturing operation shall be determined as the values that, when summed with the values in paragraph (b)(2)(i) of this section, are less than 9.1 Mg/yr (10 tons/yr) for each individual HAP and 22.7 Mg/yr (25 tons/yr) for the combination of HAP.

(3) The limits on the HAP utilized determined in paragraph (b)(2) of this section shall be in terms of Mg/yr (or tons/yr), calculated monthly on a rolling 12-month average. The owner or operator shall not exceed these limits.

(4) An owner or operator subject to paragraph (b) of this section shall meet the requirements in paragraph (h) of this section.

(5) A magnetic tape manufacturing operation that is subject to paragraph (b) of this section and is located at an area source is not subject to paragraphs (c) through (g) of this section.

(c) Except as provided by § 63.703(b), each owner or operator of an affected source subject to this subpart shall limit gaseous HAP emitted from each solvent storage tank, piece of mix preparation equipment, coating operation, waste handling device, and condenser vent in solvent recovery as specified in paragraphs (c)(1) through (c)(5) of this section:

(1) Except as otherwise allowed in paragraphs (c)(2), (3), (4), and (5) of this section, each owner or operator shall limit gaseous HAP emitted from each solvent storage tank, piece of mix preparation equipment, coating operation, waste handling device, and condenser vent in solvent recovery by an overall HAP control efficiency of at least 95 percent.

(2) An owner or operator that uses an incinerator to control emission points listed in paragraph (c)(1) of this section may choose to meet the overall HAP control efficiency requirement of paragraph (c)(1) of this section, or may operate the incinerator such that an outlet HAP concentration of no greater than 20 parts per million by volume (ppmv) by compound on a dry basis is achieved, as long as the efficiency of the capture system is 100 percent.

(3) An owner or operator may choose to meet the requirements of paragraph (c)(1) or (2) of this section by venting the room, building, or enclosure in which the HAP emission point is located to an add-on air pollution control device, as long as the required overall HAP control efficiency of this method is sufficient to meet the requirements of paragraph (c)(1) or (2) of this section.

(4) In lieu of controlling HAP emissions from each solvent storage tank to the level required by paragraph (c)(1) of this section, an owner or operator of an affected source may:

(i) Control HAP emissions from all coating operations by an overall HAP control efficiency of at least 97 percent in lieu of controlling 10 HAP solvent storage tanks that do not exceed 20,000 gallons each in capacity; or

(ii) Control HAP emissions from all coating operations by an overall HAP control efficiency of at least 98 percent in lieu of controlling 15 HAP solvent storage tanks that do not exceed 20,000 gallons each in capacity; or

(iii) Control HAP emissions from all coating operations by an overall HAP control efficiency of at least 99 percent in lieu of controlling 20 HAP solvent storage tanks that do not exceed 20,000 gallons each in capacity.

(iv) Owners or operators choosing to meet the requirements of paragraphs (c)(4)(i), (ii), or (iii) of this section are

also subject to the reporting requirement of § 63.707(k).

(5) In lieu of controlling HAP emissions from a coating operation to the level required by paragraph (c)(1) of this section, owners or operators may use magnetic coatings that contain no greater than 0.18 kilograms of HAP per liter of coating solids for that coating operation. For the requirements of this paragraph, §§ 63.6(e)(3), 63.6(f) (1) and (2), 63.8(b) (2) and (3), 63.8(c), 63.8(d), 63.8(e), 63.8(g), 63.9 (e) and (g), 63.10(c), 63.10(d) (2), (3), and (5), 63.10(e) (1) and (2), and 63.11 of subpart A do not apply.

(d) *Particulate transfer operations.* Except as stipulated by § 63.703(b), each owner or operator of an affected source subject to this subpart shall:

(1) Use an enclosed transfer method to perform particulate HAP transfer; or

(2) Direct emissions from particulate HAP transfer through a hood or enclosure to a baghouse or fabric filter that exhibits no visible emissions while controlling HAP emissions from particulate HAP transfer.

(e) *Wash sinks for cleaning removable parts.* (1) Except as stipulated by § 63.703(b), each owner or operator of an affected source subject to this subpart shall limit gaseous HAP emissions from each wash sink containing HAP:

(i) So that the overall HAP control efficiency is no less than 88 percent; or

(ii) By maintaining a minimum freeboard ratio of 75 percent in the wash sink at all times when the sink contains HAP.

(2) Owners or operators may meet the requirements of paragraph (e)(1)(i) of this section by venting the room, building, or enclosure in which the sink is located, as long as the overall HAP control efficiency of this method is demonstrated to be at least 88 percent using the test methods in § 63.705(e).

(3) Wash sinks subject to the control provisions of subpart T of this part are not subject to paragraph (e)(1) or (e)(2) of this section.

(f) *Equipment for flushing fixed lines.*

(1) Except as stipulated by § 63.703(b), each owner or operator of an affected source subject to this subpart shall limit gaseous HAP emissions from each

affected set of equipment for flushing fixed lines:

(i) So that the overall HAP control efficiency is at least 95 percent; or

(ii) By using a closed system for flushing fixed lines.

(2) Owners or operators may meet the requirements of paragraph (f)(1)(i) of this section by venting the room, building, or enclosure in which the fixed lines are located, as long as the overall HAP control efficiency of this method is demonstrated to be at least 95 percent using the test methods in § 63.705(f).

(g) *Wastewater treatment systems.* (1) Except as stipulated by § 63.703(b), each owner or operator of an affected source subject to this subpart shall:

(i) Treat the wastewater discharge to remove each HAP from magnetic tape manufacturing operations that is present in the wastewater discharge by at least the fraction removed ( $F_R$ ) specified in Table 9 of 40 CFR part 63, subpart G; or

(ii) Treat (other than by dilution) the HAP from magnetic tape manufacturing operations that are present in the wastewater discharge such that the exit concentration is less than 50 ppmw of total VOHAP.

(2) The treatment method used to meet the requirements of paragraph (g)(1) of this section shall not transfer emissions from the water to the atmosphere in an uncontrolled manner.

(h)(1) Magnetic tape manufacturing operations that are subject to § 63.703(b) and are not at major sources are not subject to §§ 63.6(e), 63.6(f), 63.6(g), 63.6(i)(4), 63.7, 63.8, 63.9 (c) through (h), 63.10(b)(2), 63.10(c), 63.10(d) (2) through (5), 63.10(e), and 63.11 of subpart A.

(2) Magnetic tape manufacturing operations subject to § 63.703(b) shall fulfill the recordkeeping requirements of § 63.706(e) and the reporting requirements of § 63.707 (b), (c), and (j).

(3) An owner or operator of a magnetic tape manufacturing operation subject to § 63.703(b) who chooses to no longer be subject to § 63.703(b) shall notify the Administrator or delegated State of such change. If by no longer being subject to § 63.703(b), the source at which the magnetic tape manufacturing operation is located would become a major source, the owner or op-

erator shall meet the following requirements, starting from the date of such notification:

(i) Comply with paragraphs (c) through (g) of this section, and other provisions of this subpart within the timeframe specified in § 63.6(c)(5); and

(ii) Comply with the HAP utilization limits in § 63.703(b) until the requirements of paragraph (h)(3)(i) of this section are met.

(i) For any solvent storage tank, piece of mix preparation equipment, waste handling device, condenser vent in solvent recovery, wash sink for cleaning removable parts, and set of equipment for flushing of fixed lines, the owner or operator may, instead of meeting the requirements of paragraphs (c)(1), (e)(1)(i), or (f)(1)(i) of this section, vent the gaseous HAP emissions to an add-on air pollution control device other than an incinerator that, in conjunction with capture equipment or ductwork, is designed to achieve an overall HAP control efficiency of at least 95 percent for the emissions from the coating operation, and achieve an alternate outlet concentration limit when coating operations are not occurring, as determined in § 63.704(b)(11)(ii).

(j) The requirements of this subpart do not preclude the use of pressure relief valves and vacuum relief valves for safety purposes.

#### **§ 63.704 Compliance and monitoring requirements.**

(a) For owners or operators of an affected source that are using add-on air pollution control equipment or a steam stripper to comply with § 63.703, paragraph (b) of this section identifies the operating parameter to be monitored to demonstrate continuous compliance. For all owners or operators subject to § 63.703, except § 63.703(b) and (h), regardless of the type of control technique used, paragraph (c) of this section identifies the procedures that must be followed to demonstrate continuous compliance with § 63.703.

(b) *Establishing a limit under § 63.703(i) and operating parameter values.* The owner or operator of an affected source subject to § 63.703 except § 63.703(b) and (h), shall establish the operating parameter value to be monitored for compliance as required by paragraph (c) of

this section, in accordance with paragraphs (b)(1) through (b)(11) of this section. An owner or operator subject to § 63.703(i) shall establish a limit as required in paragraph (b)(11)(ii) of this section.

(1) Except as allowed by paragraphs (b)(2), (3), (4), (5), or (9) of this section, for each add-on air pollution control device used to control solvent HAP emissions, the owner or operator shall fulfill the requirements of paragraph (b)(1)(i) or (ii) of this section.

(i) The owner or operator shall establish as a site-specific operating parameter the outlet total HAP or VOC concentration that demonstrates compliance with § 63.703(c)(1), (c)(2), (c)(4), (e)(1)(i), (f)(1)(i), or (i) as appropriate; or

(ii) The owner or operator shall establish as the site-specific operating parameter the control device efficiency that demonstrates compliance with § 63.703(c)(1), (c)(4), (e)(1)(i), and (f)(1)(i).

(iii) When a nonregenerative carbon adsorber is used to comply with § 63.703(c)(1), the site-specific operating parameter value may be established as part of the design evaluation used to demonstrate initial compliance (§ 63.705(c)(6)). Otherwise, the site-specific operating parameter value shall be established during the initial performance test conducted according to the procedures of § 63.705(c)(1), (2), (3), or (4).

(2) For each condenser used as the add-on air pollution control device to comply with § 63.703(c), (e)(1)(i), (f)(1)(i) or (i), in lieu of meeting the requirements of § 63.704(b)(1), during the initial performance test conducted according to the procedures of § 63.705(c)(1), (2), or (4), the owner or operator may establish as a site-specific operating parameter the maximum temperature of the condenser vapor exhaust stream and shall set the operating parameter value that demonstrates compliance with § 63.703(c), (e)(1)(i), (f)(1)(i) or (i) as appropriate;

(3) For each thermal incinerator, in lieu of meeting the requirements of § 63.704(b)(1), during the initial performance test conducted according to the procedures of § 63.705(c)(1), (2), or (4), the owner or operator may establish as a site-specific operating parameter the

minimum combustion temperature and set the operating parameter value that demonstrates compliance with § 63.703(c), (e)(1)(i), or (f)(1)(i), as appropriate.

(4) For each catalytic incinerator, in lieu of meeting the requirements of § 63.704(b)(1), during the initial performance test conducted according to the procedures of § 63.705(c)(1), (2), or (4), the owner or operator may establish as site-specific operating parameters the minimum gas temperature upstream of the catalyst bed and the minimum gas temperature difference across the catalyst bed, and set the operating parameter values that demonstrate compliance with § 63.703(c), (e)(1)(i), or (f)(1)(i), as appropriate.

(5) For each nonregenerative carbon adsorber, in lieu of meeting the requirements of § 63.704(b)(1), the owner or operator may establish as the site-specific operating parameter the carbon replacement time interval, as determined by the maximum design flow rate and organic concentration in the gas stream vented to the carbon adsorption system. The carbon replacement time interval shall be established either as part of the design evaluation to demonstrate initial compliance (§ 63.705(c)(6)), or during the initial performance test conducted according to the procedures of § 63.705(c)(1), (2), (3), or (4).

(6) Each owner or operator venting solvent HAP emissions from a source through a room, enclosure, or hood, to a control device to comply with § 63.703(c), (e)(1)(i), (f)(1)(i), or (i) shall:

(i) Submit to the Administrator with the compliance status report required by § 63.9(h) of the General Provisions a plan that:

(A) Identifies the operating parameter to be monitored to ensure that the capture efficiency measured during the initial compliance test is maintained;

(B) Discusses why this parameter is appropriate for demonstrating ongoing compliance; and

(C) Identifies the specific monitoring procedures;

(ii) Set the operating parameter value, or range of values, that demonstrate compliance with § 63.703(c), (e)(1)(i), (f)(1)(i), or (i), as appropriate; and

(iii) Conduct monitoring in accordance with the plan submitted to the Administrator unless comments received from the Administrator require an alternate monitoring scheme.

(7) For each baghouse or fabric filter used to control particulate HAP emissions in accordance with § 63.703(d)(2), the owner or operator shall establish as the site-specific operating parameter the minimum ventilation air flow rate through the inlet duct to the baghouse or fabric filter that ensures that particulate HAP are being captured and delivered to the control device. The minimum ventilation air flow rate is to be supported by the engineering calculations that are considered part of the initial performance test, as required by § 63.705(g)(2).

(8) Owners or operators subject to § 63.704(b)(1), (2), (3), (4), (5), (6), or (7) shall calculate the site-specific operating parameter value, or range of values, as the arithmetic average of the maximum and/or minimum operating parameter values, as appropriate, that demonstrate compliance with § 63.703(c), (d), (e), (f) or (i) during the multiple test runs required by § 63.705(b)(2) and (b)(1), or during the multiple runs of other tests conducted as allowed by paragraph § 63.704(b)(11).

(9) For each solvent recovery device used to comply with § 63.703(c), in lieu of meeting the requirements of paragraph (b)(1) of this section, the results of the material balance calculation conducted in accordance with § 63.705(c)(1) may serve as the site-specific operating parameter that demonstrates compliance with § 63.703(c).

(10) Owners or operators complying with the provisions of § 63.703(g) shall establish the site-specific operating parameter according to paragraph (b)(10)(i) or (ii) of this section.

(i) Owners or operators using a steam stripper shall establish the steam-to-feed ratio as the site-specific operating parameter, except as allowed in paragraph (b)(10)(ii) of this section, according to the following criteria:

(A) The minimum operating parameter value shall correspond to at least the fraction removed specified in § 63.703(g)(1)(i) and be submitted to the permitting authority for approval with

the design specifications required by § 63.705(h)(1); or

(B) The minimum operating parameter value shall be that value that corresponds to a total VOHAP outlet concentration in the wastewater of less than 50 ppmw as determined through tests conducted in accordance with § 63.705(b)(9) and (h)(2); or

(C) The minimum operating parameter value shall be the value that corresponds to at least the fraction removed specified in § 63.705(g)(1)(i), as demonstrated through tests conducted in accordance with § 63.705(b)(9) and (h)(3).

(ii) Owners or operators complying with § 63.703(g) through the use of a steam stripper or any other control technique may establish as a site-specific operating parameter the outlet total VOHAP concentration according to the following criteria:

(A) The minimum operating parameter value shall correspond to at least the fraction removed specified in § 63.703(g)(1)(i) and be submitted to the permitting authority for approval with the design specifications required by § 63.705(h)(1); or

(B) The minimum operating parameter value shall be a total VOHAP outlet concentration in the wastewater of less than 50 ppmw, as required by § 63.703(g)(1)(ii), and as determined through tests conducted in accordance with § 63.705 (b)(9) and (h)(2); or

(C) The minimum operating parameter value shall be the value that corresponds to at least the fraction removed specified in § 63.705(g)(1)(i), as demonstrated through tests conducted in accordance with § 63.705 (b)(9) and (h)(3).

(11) *Compliance provisions for nonrepresentative operating conditions.* (i) The owner or operator of an affected source may conduct multiple performance tests to establish the operating parameter value, or range of values, that demonstrates compliance with the standards in § 63.703 during various operating conditions.

(ii) To establish an alternate outlet concentration limit as provided in § 63.703(i), the owner or operator, when the coating operation is not occurring, shall conduct a performance test using the methods in § 63.705 for determining

initial compliance with § 63.703 (c)(1), (e)(1)(i) or (f)(1)(i), or shall collect data from continuous emission monitors used to determine continuous compliance as specified in § 63.704 (b) and (c). During the period in which this limit is being established, the control device shall be operated in accordance with good air pollution control practices and in the same manner as it was operated to achieve the emission limitation for coating operations. Owners or operators choosing to establish such an alternative shall also comply with paragraphs (b)(11)(ii) (A) and (B) of this section.

(A) The owner or operator shall submit the alternate outlet HAP concentration limit within 180 days after the compliance demonstration required by § 63.7 of subpart A, to the Administrator, as required by § 63.707(k)(1).

(B) The Administrator will approve or disapprove the limit proposed in accordance with paragraph (b)(11)(ii)(A) of this section within 60 days of receipt of the report required by § 63.707(k)(1), and any other supplemental information requested by the Administrator to support the alternate limit.

(c) *Continuous compliance monitoring.* Following the date on which the initial compliance demonstration is completed, continuous compliance with the standards shall be demonstrated as outlined in paragraphs (c), (d), (e), or (f) of this section.

(1)(i) Each owner or operator of an affected source subject to § 63.703 (c)(1), (c)(2), (c)(3), (c)(4), (e)(1)(i), (f)(1)(i), or (i) of this subpart shall monitor the applicable parameters specified in paragraphs (c)(3), (4), (5), (6), (7), or (9) of this section depending on the type of control technique used, and shall monitor the parameters specified in paragraph (c)(10) of this section.

(ii) Each owner or operator of an affected source subject to § 63.703(c)(5) of this subpart shall demonstrate continuous compliance as required by paragraph (c)(8) of this section.

(iii) Each owner or operator of an affected source subject to § 63.703(d)(2) of this subpart shall demonstrate continuous compliance as required by paragraph (e) of this section.

(iv) Each owner or operator of an affected source subject to § 63.703(g) of

this subpart shall demonstrate continuous compliance as required by paragraph (d) of this section.

(2) Compliance monitoring shall be subject to the following provisions.

(i) Except as allowed by paragraph (c)(3)(i)(C) of this section, all continuous emission monitors shall comply with performance specification (PS) 8 or 9 in 40 CFR part 60, appendix B, as appropriate depending on whether volatile organic compound (VOC) or HAP concentration is being measured. The requirements in appendix F of 40 CFR part 60 shall also be followed. In conducting the quarterly audits required by appendix F, owners or operators must challenge the monitors with compounds representative of the gaseous emission stream being controlled.

(ii) All temperature monitoring equipment shall be installed, calibrated, maintained, and operated according to the manufacturer's specifications. The thermocouple calibration shall be verified or replaced every 3 months. The replacement shall be done either if the owner or operator chooses not to calibrate the thermocouple, or if the thermocouple cannot be properly calibrated.

(iii) If the effluent from multiple emission points are combined prior to being channeled to a common control device, the owner or operator is required only to monitor the common control device, not each emission point.

(3) Owners or operators complying with § 63.703(c), (e)(1)(i), (f)(1)(i), or (i) through the use of a control device and establishing a site-specific operating parameter in accordance with § 63.704(b)(1) shall fulfill the requirements of paragraphs (c)(3)(i) of this section and paragraph (c)(3)(ii), (iii), (iv), or (v) of this section, as appropriate.

(i) The owner or operator shall install, calibrate, operate, and maintain a continuous emission monitor.

(A) The continuous emission monitor shall be used to measure continuously the total HAP or VOC concentration at both the inlet and the outlet whenever HAP from magnetic tape manufacturing operations are vented to the control device, if continuous compliance is

demonstrated through a percent efficiency calculation (§63.704(b)(1)(ii)); or

(B) The continuous emission monitor shall be used to measure continuously the total outlet HAP or VOC concentration whenever HAP from magnetic tape manufacturing operations are vented to the control device, if the provisions of §63.704(b)(1)(i) are being used to determine continuous compliance.

(C) For owners or operators using a nonregenerative carbon adsorber, in lieu of using continuous emission monitors as specified in paragraph (c)(3)(i) (A) or (B) of this section, the owner or operator may use a portable monitoring device to monitor total HAP or VOC concentration at the inlet and outlet, or outlet of the carbon adsorber, as appropriate.

(1) The monitoring device shall be calibrated, operated, and maintained in accordance with the manufacturer's specifications.

(2) The monitoring device shall meet the requirements of part 60, appendix A, method 21, sections 2, 3, 4.1, 4.2, and 4.4. For the purposes of paragraph (c)(3)(i)(C) of this section, the words "leak definition" in method 21 shall be the outlet concentration determined in accordance with §63.704(b)(1). The calibration gas shall either be representative of the compounds to be measured or shall be methane, and shall be at a concentration associated with 125 percent of the expected organic compound concentration level for the carbon adsorber outlet vent.

(3) The probe inlet of the monitoring device shall be placed at approximately the center of the carbon adsorber outlet vent. The probe shall be held there for at least 5 minutes during which flow into the carbon adsorber is expected to occur. The maximum reading during that period shall be used as the measurement.

(ii) If complying with §63.703 (c)(1), (c)(3), (c)(4), (e)(1)(i), (f)(1)(i), or (i) through the use of a carbon adsorption system with a common exhaust stack for all of the carbon vessels, the owner or operator shall not operate the control device at an average control efficiency less than that required by §63.703 (c)(1), (c)(3), (c)(4), (e)(1)(i), or (f)(1)(i) or at an average outlet con-

centration exceeding the site-specific operating parameter value or that required by §63.703(i), for three consecutive adsorption cycles. Operation in this manner shall constitute a violation of §63.703 (c)(1), (c)(3), (c)(4), (e)(1)(i), (f)(1)(i), or (i).

(iii) If complying with §63.703 (c)(1), (c)(3), (c)(4), (e)(1)(i), (f)(1)(i), or (i) through the use of a carbon adsorption system with individual exhaust stacks for each of the multiple carbon adsorber vessels, the owner or operator shall not operate any carbon adsorber vessel at an average control efficiency less than that required by §63.703 (c)(1), (c)(3), (c)(4), (e)(1)(i), or (f)(1)(i), or at an average outlet concentration exceeding the site-specific operating parameter value or that required by §63.703(i), as calculated daily using a 3-day rolling average. Operation in this manner shall constitute a violation of §63.703 (c)(1), (c)(3), (c)(4), (e)(1)(i), (f)(1)(i), or (i).

(iv) If complying with §63.703 (c)(1), (c)(2), (c)(3), (c)(4), (e)(1)(i), (f)(1)(i), or (i) through the use of any control device other than a carbon adsorber, the owner or operator shall not operate the control device at an average control efficiency less than that required by §63.703 (c)(1), (c)(3), (c)(4), (e)(1)(i), or (f)(1)(i), or at an average outlet concentration exceeding the site-specific operating parameter value or that required by §63.703(c)(2) or (i), as calculated for any 3-hour period. Operation in this manner shall constitute a violation of §63.703 (c)(1), (c)(2), (c)(3), (c)(4), (e)(1)(i), (f)(1)(i), or (i).

(v) If complying with §63.703(c)(1) through the use of a nonregenerative carbon adsorber, in lieu of the requirements of paragraphs (c)(3) (ii) or (iii) of this section, the owner or operator may:

(A) monitor the VOC or HAP concentration of the adsorber exhaust daily or at intervals no greater than 20 percent of the design carbon replacement interval, whichever is greater; operation of the control device at a HAP or VOC concentration greater than that determined in accordance with §63.704(b)(1)(iii) shall constitute a violation of §63.703 (c)(1), (e)(1)(i), or (f)(1)(i); or

(B) replace the carbon in the carbon adsorber system with fresh carbon at a regular predetermined time interval as determined in accordance with § 63.704(b)(5); failure to replace the carbon at this predetermined time interval shall constitute a violation of § 63.703 (c)(1), (e)(1)(i), or (f)(1)(i).

(4) Owners or operators complying with § 63.703 (c)(1), (c)(3), (c)(4), (e)(1)(i), (f)(1)(i), or (i) through the use of a condenser as the add-on air pollution control device, and demonstrating compliance in accordance with § 63.704(b)(2), shall install, calibrate, operate, and maintain a thermocouple to measure continuously the temperature of the condenser vapor exhaust stream whenever HAP from magnetic tape manufacturing operations are vented to the control device. Operation of the control device at an average vapor exhaust temperature greater than the site-specific operating parameter value or values established in accordance with § 63.704(b)(2) for any 3-hour period shall constitute a violation of § 63.703 (c)(1), (c)(3), (c)(4), (e)(1)(i), (f)(1)(i) or (i).

(5) Owners or operators complying with § 63.703 (c)(1), (c)(2), (c)(3), (c)(4), (e)(1)(i), or (f)(1)(i) through the use of a thermal incinerator and demonstrating compliance in accordance with § 63.704(b)(3) shall install, calibrate, operate, and maintain a thermocouple to measure continuously the combustion temperature whenever HAP from magnetic tape manufacturing operations are vented to the control device. Operation of the control device at an average combustion temperature less than the operating parameter value or values established in accordance with § 63.704(b)(3) for any 3-hour period shall constitute a violation of § 63.703 (c)(1), (c)(2), (c)(3), (c)(4), (e)(1)(i), or (f)(1)(i).

(6) Owners or operators complying with § 63.703 (c)(1), (c)(2), (c)(3), (c)(4), (e)(1)(i), or (f)(1)(i) through the use of a catalytic incinerator and demonstrating compliance in accordance with § 63.704(b)(4) shall install, calibrate, operate, and maintain a thermocouple to measure continuously the gas temperature both upstream and downstream of the catalyst bed whenever HAP from magnetic tape manufacturing operations are vented to the control device. Operation of the control device at an

average upstream gas temperature, or at an average gas temperature difference across the catalyst bed, less than the operating parameter values established in accordance with § 63.704(b)(4) for any 3-hour period shall constitute a violation of § 63.703 (c)(1), (c)(2), (c)(3), (c)(4), (e)(1)(i), or (f)(1)(i).

(7) Owners or operators complying with § 63.703 (c)(1), (c)(2), (c)(3), (c)(4), (e)(1)(i), (f)(1)(i), or (i) by capturing emissions through a room, enclosure, or hood shall install, calibrate, operate, and maintain the instrumentation necessary to measure continuously the site-specific operating parameter established in accordance with § 63.704(b)(6) whenever HAP from magnetic tape manufacturing operations are vented through the capture device. Operation of the capture device at an average value greater than or less than (as appropriate) the operating parameter value established in accordance with § 63.704(b)(6) for any 3-hour period shall constitute a violation of § 63.703 (c)(1), (c)(2), (c)(3), (c)(4), (e)(1)(i), (f)(1)(i), or (i).

(8) The owner or operator of an affected source complying with § 63.703(c)(5) shall demonstrate continuous compliance by using a coating that has a HAP content of no greater than 0.18 kilograms of HAP per liter of coating solids, as measured in accordance with § 63.705(c)(5), and by maintaining and reporting the records required by §§ 63.706(f) and 63.707(e) and (i)(2).

(9) For owners or operators complying with § 63.703 (c)(1), (c)(3), or (c)(4) through the use of a solvent recovery device and demonstrating initial compliance in accordance with the provisions of § 63.705(c)(1), continuous compliance shall be demonstrated using procedures in § 63.705(c)(1) and through the recordkeeping and reporting requirements of §§ 63.706(d), 63.707(d), and 63.707(i)(5). The provisions of § 63.8(b) (2) and (3), (c), (d), (e), (f), and (g) (1), and (2) of subpart A do not apply.

(10) The owner or operator of an affected emission point using a vent system that contains bypass lines (not including equipment such as low leg drains, high point bleeds, analyzer vents, open-ended valves or lines, and pressure relief valves needed for safety purposes) that could potentially divert

a vent stream away from the control device used to comply with § 63.703 (c)(1), (c)(2), (c)(3), (c)(4), (e)(1)(i), (f)(1)(i), or (i) shall:

(i) Install, calibrate, maintain, and operate a flow indicator that provides a record of vent stream flow at least once every 15 minutes; records shall be generated as specified in § 63.706(c)(1); and the flow indicator shall be installed at the entrance to any bypass line that could divert the vent stream away from the control device to the atmosphere; or

(ii) Secure any bypass line valve in the closed position with a car-seal or a lock-and-key type configuration; a visual inspection of the seal or closure mechanism shall be performed at least once every month to ensure that the valve is maintained in the closed position and the vent stream is not diverted through the bypass line; or

(iii) Ensure that any bypass line valve is in the closed position through continuous monitoring of valve position; the monitoring system shall be inspected at least once every month to ensure that it is functioning properly; or

(iv) Use an automatic shutdown system in which any HAP-emitting operations are ceased when flow from these operations is diverted away from the control device to any bypass line; the automatic system shall be inspected at least once every month to ensure that it is functioning properly.

(d) Owners or operators complying with § 63.703(g) shall demonstrate continuous compliance in accordance with paragraph (d)(1) or (d)(2) of this section.

(1) An owner or operator that established the steam-to-feed ratio as the site-specific operating parameter in accordance with § 63.704(b)(10)(i) shall continuously measure the steam-to-feed ratio whenever HAP-containing wastewater from magnetic tape manufacturing operations is being fed to the steam stripper. Operation of the steam stripper at a steam-to-feed ratio less than the operating parameter value or values established in accordance with § 63.704(b)(10)(i) for any 3-hour period shall constitute a violation of § 63.703(g).

(2) An owner or operator that established the total outlet VOHAP concentration of the wastewater discharge as the site-specific operating parameter in accordance with § 63.704(b)(10)(ii) shall measure the total VOHAP concentration of the wastewater discharge once per month. Operation of the control device at an outlet VOHAP concentration greater than the operating parameter value or values established in accordance with § 63.704(b)(10)(ii) for any month shall constitute a violation of § 63.703(g).

(e) Owners or operators complying with § 63.703(d)(2) of this subpart through the use of a baghouse or fabric filter shall perform visible emission testing each day that particulate HAP transfer occurs, using the procedures in § 63.705(b)(10). Owners or operators shall also install, calibrate, and operate the instrumentation necessary to continuously monitor the ventilation air flow rate in the inlet duct to the baghouse or fabric filter whenever particulate HAP transfer occurs. The occurrence of visible emissions shall constitute a violation of § 63.703(d)(2), and the operation of the baghouse or fabric filter at a flow rate less than the value or values established in accordance with § 63.704(b)(7) for any 3-hour period shall constitute a violation of § 63.703(d)(2).

(f) An owner or operator who uses an air pollution control device not listed in § 63.704 to comply with § 63.703(c), (e)(1)(i), (f)(1)(i), or (i), or a device other than a steam stripper to comply with § 63.703(g) shall submit to the Administrator a description of the device, test data verifying the performance of the device, and appropriate site-specific operating parameters that will be monitored to demonstrate continuous compliance with the standard. The monitoring plan submitted by an owner or operator in accordance with this paragraph is subject to approval by the Administrator.

**§ 63.705 Performance test methods and procedures to determine initial compliance.**

(a) Except as specified in § 63.705(a) (1) through (3), to determine initial compliance with the emission limits under § 63.703 (c), (d)(2), (e)(1), (f)(1), and (g), the owner or operator shall conduct an

initial performance demonstration as required under § 63.7 using the procedures and test methods listed in § 63.7 and § 63.705. If multiple emission points are vented to one common control device to meet the requirements of § 63.703 (c), (d)(2), (e)(1), and (f)(1), only one performance test is required to demonstrate initial compliance for that group of emission points. This section also contains initial compliance demonstration procedures (other than testing) for owners or operators subject to § 63.703 (c), (d)(1), (e)(1)(ii), (f)(1)(ii), and (g).

(1) A control device (not enclosure) used to comply with § 63.703 (c), (e), or (f) does not need to be tested if each of the following criteria are met:

(i) It is used to control gaseous HAP emissions from an existing affected source;

(ii) It is operating prior to March 11, 1994;

(iii) It is equipped with continuous emission monitors for determining inlet and outlet total HAP or VOC concentration, such that a percent efficiency can be calculated; and

(iv) The continuous emission monitors are used to demonstrate continuous compliance in accordance with § 63.704(c)(3)(i).

(2) The owner or operator is not required to conduct an initial performance test if the requirements of § 63.7(e)(2)(iv) or § 63.7(h) are met.

(3) An owner or operator is not required to conduct an initial performance test for a capture device when:

(i) The room, enclosure, or vent was previously tested to demonstrate compliance with subpart SSS of part 60; and

(ii) Sufficient data were gathered during the test to establish operating parameter values in accordance with § 63.704(b)(6) (i), (ii), and (iii).

(b) When an initial compliance demonstration is required by this subpart, the procedures in paragraphs (b)(1) through (b)(10) of this section shall be used in determining initial compliance with the provisions of this subpart.

(1) EPA Method 24 of appendix A of part 60 is used to determine the VOC content in coatings. If it is demonstrated to the satisfaction of the Administrator that plant coating formu-

lation data are equivalent to EPA Method 24 results, formulation data may be used. In the event of any inconsistency between an EPA Method 24 test and an affected source's formulation data, the EPA Method 24 test will govern. For EPA Method 24, the coating sample must be a 1-liter sample taken into a 1-liter container at a location and time such that the sample will be representative of the coating applied to the base substrate (i.e., the sample shall include any dilution solvent or other VOC added during the manufacturing process). The container must be tightly sealed immediately after the sample is taken. Any solvent or other VOC added after the sample is taken must be measured and accounted for in the calculations that use EPA Method 24 results.

(2) Formulation data is used to determine the HAP content of coatings.

(3) Either EPA Method 18 or EPA Method 25A of appendix A of part 60, as appropriate to the conditions at the site, shall be used to determine HAP or VOC concentration of air exhaust streams as required by § 63.705(c). The owner or operator shall submit notice of the intended test method to the Administrator for approval along with the notification of the performance test required under § 63.7(b). Method selection shall be based on consideration of the diversity of organic species present and their total concentration and on consideration of the potential presence of interfering gases. Except as indicated in paragraphs (b)(3) (i) and (ii) of this section, the test shall consist of three separate runs, each lasting a minimum of 30 minutes.

(i) When either EPA Method 18 or EPA Method 25A is to be used in the determination of the efficiency of a fixed-bed carbon adsorption system with a common exhaust stack for all the individual carbon adsorber vessels pursuant to § 63.705(c) (2) or (4), the test shall consist of three separate runs, each coinciding with one or more complete sequences through the adsorption cycles of all of the individual carbon adsorber vessels.

(ii) When either EPA Method 18 or EPA Method 25A is to be used in the determination of the efficiency of a fixed-bed carbon adsorption system

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with individual exhaust stacks for each carbon adsorber vessel pursuant to § 63.705(c) (3) or (4), each carbon adsorber vessel shall be tested individually. The test for each carbon adsorber vessel shall consist of three separate runs. Each run shall coincide with one or more complete adsorption cycles.

(4) EPA Method 1 or 1A of appendix A of part 60 is used for sample and velocity traverses.

(5) EPA Method 2, 2A, 2C, or 2D of appendix A of part 60 is used for velocity and volumetric flow rates.

(6) EPA Method 3 of appendix A of part 60 is used for gas analysis.

(7) EPA Method 4 of appendix A of part 60 is used for stack gas moisture.

(8) EPA Methods 2, 2A, 2C, 2D, 3, and 4 shall be performed, as applicable, at least twice during each test period.

(9) Wastewater analysis shall be conducted in accordance with paragraph (b)(9)(i) or (b)(9)(ii) of this section.

(i) Use Method 305 of 40 CFR part 63, appendix A and the equations in paragraphs (b)(9)(i) (A) and (B) of this section to determine the total VOHAP concentration of a wastewater stream.

(A) The following equation shall be used to calculate the VOHAP concentration of an individually speciated HAP.

$$C_i = \left( C_c * \frac{MW}{24.055} * \frac{P_i}{760} * \frac{293}{T_i} * t * L * 10^3 \right) / M_s$$

where:

$C_i$  = VOHAP concentration of the individually-speciated organic HAP in the wastewater, parts per million by weight.

$C_c$  = Concentration of the organic HAP (i) in the gas stream, as measured by Method 305 of appendix A of this part, parts per million by volume on a dry basis.

$M_s$  = Mass of sample, from Method 305 of appendix A of this part, milligrams.

MW = Molecular weight of the organic HAP (i), grams per gram-mole.

24.055 = Ideal gas molar volume at 293° Kelvin and 760 millimeters of mercury, liters per gram-mole.

$P_i$  = Barometric pressure at the time of sample analysis, millimeters mercury absolute.

760 = Reference or standard pressure, millimeters mercury absolute.

293 = Reference or standard temperature, °Kelvin.

$T_i$  = Sample gas temperature at the time of sample analysis, °Kelvin.

$t$  = Actual purge time, from Method 305 of appendix A of this part, minutes.

$L$  = Actual purge rate, from Method 305 of appendix A of this part, liters per minute.

$10^3$  = Conversion factor, milligrams per gram.

(B) Total VOHAP concentration (stream) can be determined by summing the VOHAP concentrations of all individually speciated organic HAP in the wastewater.

$$C_{stream} = \sum_{i=1}^n C_i$$

where:

$C_{stream}$  = Total VOHAP concentration of wastewater stream.

$n$  = Number of individual organic HAP (i) in the wastewater stream.

$C_i$  = VOHAP concentration of individual organic HAP (i) calculated according to the procedures in paragraph (b)(9)(i)(A) of this section.

(ii) Use a test method or results from a test method that measures organic HAP concentrations in the wastewater, and that has been validated according to section 5.1 or 5.3 of Method 301 of appendix A of this part. The specific requirement of Method 305 of appendix A of this part to collect the sample into polyethylene glycol would not be applicable.

(A) If measuring the total VOHAP concentration of the exit stream in accordance with §§ 63.703(g)(1)(ii) and 63.705(h)(2), the concentrations of the individual organic HAP measured in the water shall be corrected to their concentrations had they been measured by Method 305 of appendix A of this part. This is done by multiplying each concentration by the compound-specific fraction measured factor ( $F_M$ ) listed in table 34 of 40 CFR part 63, subpart G.

(B) If measuring the total HAP concentration of an inlet and outlet wastewater stream to demonstrate compliance with § 63.703(g)(1)(i) and following the procedures of § 63.705(h)(3), the concentrations of the individual organic HAP measured in the water do not need to be corrected.

(10) EPA Method 22 of appendix A of part 60 is used to determine visible emissions. Visible emissions testing shall be conducted for a minimum of 6 minutes during a time when particulate HAP transfer, as defined in this subpart, is occurring.

(c) *Initial compliance demonstrations.* Except as stipulated in § 63.705(a), each owner or operator subject to the requirements of § 63.703(c) must demonstrate initial compliance with the requirements of this subpart by following the procedures of paragraphs (c)(1), (2), (3), (4), (5), or (6) and paragraph (d) of this section, as applicable. Each owner or operator subject to § 63.703(d), (e), (f), and (g) must demonstrate initial compliance with the requirements of this subpart by following the procedures of paragraphs (e), (f), (g), and (h) of this section, as appropriate.

(1) To demonstrate initial and continuous compliance with § 63.703(c)(1), (c)(3), or (c)(4) when emissions from only the affected coating operations are controlled by a dedicated solvent recovery device, each owner or operator of the affected coating operation may perform a liquid-liquid HAP or VOC material balance over rolling 7-day periods in lieu of demonstrating compliance through the methods in paragraphs (c)(2), (c)(3), or (c)(4) of this section. Results of the material balances calculation performed to demonstrate initial compliance shall be submitted to the Administrator with

the notification of compliance status required by § 63.9(h) and § 63.707(d). When demonstrating compliance by this procedure, § 63.7(e)(3) of subpart A does not apply. The amount of liquid HAP or VOC applied and recovered shall be determined as discussed in paragraph (c)(1)(iii) of this section. The overall HAP or VOC emission reduction (R) is calculated using equation 1:

$$R = \frac{M_r}{\sum_{i=1}^n [W_{oi} M_{ci} - RS_i]} \times 100 \quad (\text{Eq. 1})$$

(i) The value of  $RS_i$  is zero unless the owner or operator submits the following information to the Administrator for approval of a measured  $RS_i$  value that is greater than zero:

(A) Measurement techniques; and

(B) Documentation that the measured value of  $RS_i$  exceeds zero.

(ii) The measurement techniques of paragraph (c)(1)(i)(A) of this section shall be submitted to the Administrator for approval with the notification of performance test required under § 63.7(b).

(iii) Each owner or operator demonstrating compliance by the test method described in paragraph (c)(1) of this section shall:

(A) Measure the amount of coating applied at the coater;

(B) Determine the VOC or HAP content of all coating applied using the test method specified in § 63.705(b) (1) or (2);

(C) Install, calibrate, maintain, and operate, according to the manufacturer's specifications, a device that indicates the amount of HAP or VOC recovered by the solvent recovery device over rolling 7-day periods; the device shall be certified by the manufacturer to be accurate to within  $\pm 2.0$  percent, and this certification shall be kept on record;

(D) Measure the amount of HAP or VOC recovered; and

(E) Calculate the overall HAP or VOC emission reduction (R) for rolling 7-day periods using Equation 1.

(iv) Compliance is demonstrated if the value of R is equal to or greater than the overall HAP control efficiency

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required by § 63.703 (c)(1), (c)(3), or (c)(4).

(2) To demonstrate initial compliance with § 63.703 (c)(1), (c)(2), (c)(3), or (c)(4) when affected HAP emission points are controlled by an emission control device other than a fixed-bed carbon adsorption system with individual exhaust stacks for each carbon adsorber vessel, each owner or operator of an affected source shall perform a gaseous emission test using the following procedures.

(i) Construct the overall HAP emission reduction system so that all volumetric flow rates and total HAP or VOC emissions can be accurately determined by the applicable test methods and procedures specified in § 63.705(b) (3) through (8).

(ii) Determine capture efficiency from the HAP emission points by capturing, venting, and measuring all HAP emissions from the HAP emission points. During a performance test, the owner or operator of affected HAP emission points located in an area with other gaseous emission sources not affected by this subpart shall isolate the affected HAP emission points from all other gaseous emission points by one of the following methods:

(A) Build a temporary total enclosure (see § 63.702) around the affected HAP emission point(s); or

(B) Shut down all gaseous emission points not affected by this subpart and continue to exhaust fugitive emissions from the affected HAP emission points through any building ventilation system and other room exhausts such as drying ovens.

All ventilation air must be vented through stacks suitable for testing.

(iii) Operate the emission control device with all affected HAP emission points connected and operating.

(iv) Determine the efficiency (E) of the control device using equation 2:

$$E = \frac{\sum_{i=1}^n Q_{bi} C_{bi} - \sum_{j=1}^p Q_{aj} C_{aj}}{\sum_{i=1}^n Q_{bi} C_{bi}} \quad (\text{Eq. 2})$$

(v) Determine the efficiency (F) of the capture system using equation 3:

$$F = \frac{\sum_{i=1}^n Q_{di} C_{di}}{\sum_{i=1}^n Q_{di} C_{di} + \sum_{k=1}^p Q_{fk} C_{fk}} \quad (\text{Eq. 3})$$

(vi) For each HAP emission point subject to § 63.703, compliance is demonstrated if either of the following conditions are met:

(A) The product of (E)×(F) is equal to or greater than the overall HAP control efficiency required by § 63.703(c)(1), (c)(3), or (c)(4); or

(B) When the owner or operator is subject to § 63.703(c)(2), the value of F is equal to 1 and the value of C<sub>aj</sub> at the outlet of the incinerator is demonstrated to be no greater than 20 ppmv by compound, on a dry basis.

(3) To demonstrate compliance with § 63.703(c)(1), (c)(3), or (c)(4) when affected HAP emission points are controlled by a fixed-bed carbon adsorption system with individual exhaust stacks for each carbon adsorber vessel, each owner or operator of an affected source shall perform a gaseous emission test using the following procedures:

(i) Construct the overall HAP emission reduction system so that each volumetric flow rate and the total HAP emissions can be accurately determined by the applicable test methods and procedures specified in § 63.705(b) (3) through (8);

(ii) Assure that all HAP emissions from the affected HAP emission point(s) are segregated from gaseous emission points not affected by this subpart and that the emissions can be captured for measurement, as described in § 63.705(c)(2)(ii) (A) and (B);

(iii) Operate the emission control device with all affected HAP emission points connected and operating;

(iv) Determine the efficiency (H<sub>v</sub>) of each individual carbon adsorber vessel (v) using equation 4:

$$H_v = \frac{Q_{gv} C_{gv} - Q_{hv} C_{hv}}{Q_{gv} C_{gv}} \quad (\text{Eq. 4})$$

(v) Determine the efficiency of the carbon adsorption system (H<sub>sys</sub>) by computing the average efficiency of

the individual carbon adsorber vessels as weighted by the volumetric flow rate ( $Q_{hv}$ ) of each individual carbon adsorber vessel ( $v$ ) using equation 5:

$$H_{sys} = \frac{\sum_{v=1}^q H_v Q_{hv}}{\sum_{v=1}^q Q_{hv}} \quad (\text{Eq. 5})$$

(vi) Determine the efficiency ( $F$ ) of the capture system using equation (3).

(vii) For each HAP emission point subject to §63.703(c), compliance is demonstrated if the product of ( $H_{sys}$ ) $\times$ ( $F$ ) is equal to or greater than the overall HAP control efficiency required by §63.703(c)(1), (c)(3), or (c)(4).

(4) An alternative method of demonstrating compliance with §63.703(c)(1) through (c)(4) is the installation of a total enclosure around the affected HAP emission point(s) and the ventilation of all HAP emissions from the total enclosure to a control device with the efficiency or outlet concentration specified in paragraph (c)(4)(iii) of this section. If this method is selected, the compliance test methods described in paragraphs (c)(1), (c)(2), and (c)(3) of this section are not required. Instead, each owner or operator of an affected source shall:

(i) Demonstrate that a total enclosure is installed. An enclosure that meets the requirements in paragraphs

(c)(4)(i) (A) through (D) of this section shall be considered a total enclosure. The owner or operator of an enclosure that does not meet these requirements may apply to the Administrator for approval of the enclosure as a total enclosure on a case-by-case basis. The enclosure shall be considered a total enclosure if it is demonstrated to the satisfaction of the Administrator that all HAP emissions from the affected HAP emission point(s) are contained and vented to the control device. The requirements for automatic approval are as follows:

(A) Total area of all natural draft openings shall not exceed 5 percent of the total surface area of the total enclosure's walls, floor, and ceiling;

(B) All sources of emissions within the enclosure shall be a minimum of four equivalent diameters away from each natural draft opening;

(C) Average inward face velocity ( $FV$ ) across all natural draft openings shall be a minimum of 3,600 meters per hour as determined by the following procedures:

(1) All forced makeup air ducts and all exhaust ducts are constructed so that the volumetric flow rate in each can be accurately determined by the test methods and procedures specified in §63.705(b) (4) and (5); volumetric flow rates shall be calculated without the adjustment normally made for moisture content; and

(2) determine  $FV$  by equation 6:

$$FV = \frac{\sum_{j=1}^n Q_{out j} - \sum_{i=1}^p Q_{in i}}{\sum_{k=1}^q A_k} \quad (\text{Eq. 6})$$

(D) the air passing through all natural draft openings shall flow into the enclosure continuously. If  $FV$  is less than or equal to 9,000 meters per hour, the continuous inward flow of air shall be verified by continuous observation using smoke tubes, streamers, tracer gases, or other means approved by the Administrator over the period that the

volumetric flow rate tests required to determine  $FV$  are carried out. If  $FV$  is greater than 9,000 meters per hour, the direction of airflow through the natural draft openings shall be presumed to be inward at all times without verification.

(ii) Determine the control device efficiency using equation (2) or equations

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(4) and (5), as applicable, and the test methods and procedures specified in §63.705(b) (3) through (8).

(iii) Be in compliance if either of the following criteria are met:

(A) The installation of a total enclosure is demonstrated and the value of E determined from equation (2) (or the value of H<sub>sys</sub> determined from equations (4) and (5), as applicable) is equal to or greater than the overall HAP control efficiency required by §63.703 (c)(1), (c)(3), or (c)(4); or

(B) When the owner or operator is subject to §63.703(c)(2), the installation of a total enclosure is demonstrated and the value of C<sub>aj</sub> at the outlet of the incinerator is demonstrated to be no greater than 20 ppmv by compound, on a dry basis.

(5) To demonstrate initial and continuous compliance with §63.703(c)(5), each owner or operator of an affected source shall determine the mass of HAP contained in the coating per volume of coating solids applied for each

batch of coating applied, according to the procedures of paragraphs (c)(5) (i) through (iii) of this section. If a batch of coating is identical to a previous batch of coating applied, the original calculations can be used to demonstrate the compliance of subsequent identical batches. The calculation of the HAP content of the coating used to demonstrate initial compliance with §63.703(c)(5) shall be submitted to the Administrator with the notification of compliance status required by §63.9(h) and §63.707(e). When demonstrating compliance by this procedure, §63.7(e)(3) of subpart A does not apply.

(i) Determine the weight fraction of HAP in each coating applied using formulation data as specified in §63.705(b)(2);

(ii) Determine the volume of coating solids in each coating applied from the facility records; and

(iii) Compute the mass of HAP per volume of coating solids by equation 7:

$$G = \frac{W_{oi} \cdot M_{ci}}{L_{si} \cdot V_{ci}} \quad (\text{Eq. 7})$$

(iv) The owner or operator of an affected source is in compliance with §63.703(c)(5) if the value of G is less than or equal to 0.18 kilogram of HAP per liter of coating solids applied.

(6) When nonregenerative carbon adsorbers are used to comply with §63.703(c)(1), the owner or operator may conduct a design evaluation to demonstrate initial compliance in lieu of following the compliance test procedures of paragraph (c) (1), (2), (3), or (4) of this section. The design evaluation shall consider the vent stream composition, constituent concentrations, flow rate, relative humidity, and temperature, and shall establish the design exhaust vent stream organic compound concentration level, capacity of the carbon bed, type and working capacity of activated carbon used for the carbon bed, and design carbon replacement interval based on the total carbon working capacity of the control device and the emission point operating schedule.

(d)(1) To demonstrate initial compliance with §63.703(c) when hard piping or ductwork is used to direct HAP emissions from a HAP source to the control device, each owner or operator shall demonstrate upon inspection that the criteria of paragraph (d)(1)(i) and paragraph (d)(1) (ii) or (iii) are met.

(i) The equipment must be vented to a control device.

(ii) The control device efficiency (E or H<sub>sys</sub>, as applicable) determined using equation (2) or equations (4) and (5), respectively, and the test methods and procedures specified in §63.705(b) (3) through (8), must be equal to or greater than the overall HAP control efficiency required by §63.703 (c)(1), (c)(3), or (c)(4), or the outlet concentration must be no greater than 20 ppmv by compound, on a dry basis, as required by §63.703(c)(2).

(iii) When a nonregenerative carbon adsorber is used, the ductwork from the affected emission point(s) must be

vented to the control device and the carbon adsorber must be demonstrated, through the procedures of § 63.705(c) (1), (2), (3), (4), or (6) to meet the requirements of § 63.703(c)(1).

(2) To demonstrate initial compliance with provisions for mix preparation equipment, owners or operators shall, in addition to paragraph (d)(1) of this section, ensure that covers are closed at all times except when adding ingredients, withdrawing samples, transferring the contents, or making visual inspection when such activities cannot be carried out with the cover in place. Such activities shall be carried out through ports of the minimum practical size.

(e) To demonstrate initial compliance with § 63.703(e), the owner or operator of a wash sink subject to the provisions of this standard shall:

(1) If complying with § 63.703(e)(1)(ii), maintain at least the required minimum freeboard ratio at all times; or

(2) If complying with § 63.703(e)(1)(i), the owner or operator of an existing wash sink that vents emissions from the wash sink to a control device prior to March 11, 1994 must demonstrate that the control device is at least 95-percent efficient in accordance with § 63.705(c) (2), (3), (4), or (6); or

(3) If complying with § 63.703(e)(1)(i), each owner or operator that vents emissions from the wash sink, through a capture device, and to a control device starting on or after March 11, 1994, must demonstrate that the overall HAP control efficiency is at least 88 percent using the test methods and procedures in § 63.705(c) (2), (3), (4), or (6).

(f) To demonstrate initial compliance with § 63.703(f), the owner or operator shall:

(1) If complying with § 63.703(f)(1)(ii), install and use a closed system for flushing fixed lines; or

(2) If complying with § 63.703(f)(1)(i), each owner or operator that vents emissions from the flushing operation, through a capture device, and to a control device must demonstrate that the overall HAP control efficiency is at least 95 percent using the test methods and procedures in § 63.705(c) (2), (3), (4), or (6).

(g) To demonstrate initial compliance with § 63.703(d), the owner or operator shall:

(1) If complying with § 63.703(d)(1), install an enclosed transfer device for conveying particulate HAP, and use this device, following manufacturer's specifications or other written procedures developed for the device; or

(2) If complying with § 63.703(d)(2):

(i) Test the baghouse or fabric filter to demonstrate that there are no visible emissions using the test method in § 63.705(b)(10); and

(ii) provide engineering calculations in accordance with § 63.707(h) of this subpart with the performance test results required by § 63.7(g)(1) and § 63.9(h) of subpart A, to demonstrate that the ventilation rate from the particulate transfer activity to the control device is sufficient for capturing the particulate HAP.

(h) To demonstrate initial compliance with § 63.703(g), the owner or operator of an affected source shall follow the compliance procedures of either paragraph (h)(1), paragraph (h)(2), or paragraph (h)(3) of this section.

(1) The owner or operator shall submit to the permitting authority with the notification of compliance status required by § 63.9(h) and § 63.707(f) the design specifications demonstrating that the control technique meets the required efficiency for each HAP compound. For steam strippers, these specifications shall include at a minimum: feed rate, steam rate, number of theoretical trays, number of actual trays, feed composition, bottoms composition, overheads composition, and inlet feed temperature.

(2) The owner or operator shall demonstrate the compliance of a treatment process with the parts per million by weight (ppmw) wastewater stream concentration limits specified in § 63.703(g)(1)(ii) by measuring the concentration of total VOHAP at the outlet of the treatment process using the method specified in § 63.705(b)(9) (i) or (ii). A minimum of three representative samples of the wastewater stream exiting the treatment process, which are representative of normal flow and

concentration conditions, shall be collected and analyzed. Wastewater samples shall be collected using the sampling procedures specified in Method 25D of appendix A of part 60. Where feasible, samples shall be taken from an enclosed pipe prior to the wastewater being exposed to the atmosphere. When sampling from an enclosed pipe is not feasible, a minimum of three representative samples shall be collected in a manner that minimizes exposure of the sample to the atmosphere and loss of organic HAP prior to analysis.

(3) The owner or operator shall demonstrate the compliance of a treatment process with the HAP fraction removed requirement specified in §63.703(g)(1)(i) by measuring the concentration of each HAP at the inlet and outlet of the treatment process using the method specified in §63.705(b)(9) (i) or (ii) and the procedures of paragraphs (h)(3) (i) through (iii) of this section.

(i) The same test method shall be used to analyze the wastewater samples from both the inlet and outlet of the treatment process.

(ii) The HAP mass flow rate of each individually speciated HAP compound entering the treatment process ( $E_b$ ) and exiting the treatment process ( $E_a$ ) shall be determined by computing the product of the flow rate of the wastewater stream entering or exiting the treatment process, and the HAP concentration of each individual HAP compound of the entering or exiting wastewater streams, respectively.

(A) The flow rate of the entering and exiting wastewater streams shall be determined using inlet and outlet flow meters, respectively.

(B) The average HAP concentration of each individual HAP of the entering and exiting wastewater streams shall be determined according to the procedures specified in either paragraph (b)(9)(i)(A) or (b)(9)(ii)(B) of this section. If measuring the VOHAP concentration of an individual HAP in accordance with §63.705(b)(9)(i)(A), the concentrations of the individual organic VOHAP measured in the water shall be corrected to a HAP concentration by dividing each VOHAP concentration by the compound-specific fraction measured factor ( $F_M$ ) listed in table 34 of 40 CFR part 63, subpart G.

(C) Three grab samples of the entering wastewater stream shall be taken at equally spaced time intervals over a 1-hour period. Each 1-hour period constitutes a run, and the performance test shall consist of a minimum of three runs.

(D) Three grab samples of the exiting wastewater stream shall be taken at equally spaced time intervals over a 1-hour period. Each 1-hour period constitutes a run, and the performance test shall consist of a minimum of three runs conducted over the same 3-hour period at which the total HAP mass flow rate entering the treatment process is determined.

(E) The HAP mass flow rates of each individual HAP compound entering and exiting the treatment process are calculated as follows:

$$E_b = \frac{K}{n \times 10^6} \left( \sum_{p=1}^n V_{bp} C_{bp} \right)$$

$$E_a = \frac{K}{n \times 10^6} \left( \sum_{p=1}^n V_{ap} C_{ap} \right)$$

where:

$E_b$  = HAP mass flow rate of an individually speciated HAP compound entering the treatment process, kilograms per hour.

$E_a$  = HAP mass flow rate of an individually speciated HAP compound exiting the treatment process, kilograms per hour.

$K$  = Density of the wastewater stream, kilograms per cubic meter.

$V_{bp}$  = Average volumetric flow rate of wastewater entering the treatment process during each run  $p$ , cubic meters per hour.

$V_{ap}$  = Average volumetric flow rate of wastewater exiting the treatment process during each run  $p$ , cubic meters per hour.

$C_{bp}$  = Average HAP concentration of an individually speciated HAP in the wastewater stream entering the treatment process during each run  $p$ , parts per million by weight.

$C_{ap}$  = Average HAP concentration of an individually speciated HAP in the

wastewater stream exiting the treatment process during each run p, parts per million by weight.  
n = Number of runs.

(iii) The fraction removed across the treatment process for each individually speciated HAP compound shall be calculated as follows:

$$F_R = \frac{E_b - E_a}{E_b}$$

where:

$F_R$  = Fraction removed for an individually speciated HAP compound of the treatment process.

$E_b$  = HAP mass flow rate of an individually speciated HAP compound entering the treatment process, kilogram per hour.

$E_a$  = HAP mass flow rate of an individually speciated HAP compound exiting the treatment process, kilograms per hour.

(i) Startups and shutdowns are normal operation for this source category. Emissions from these activities are to be included when determining if the standards specified in § 63.703 are being attained.

(j) An owner or operator who uses compliance techniques other than those specified in this subpart shall submit a description of those compliance procedures, subject to the Administrator's approval, in accordance with § 63.7(f) of subpart A.

#### § 63.706 Recordkeeping requirements.

(a) Except as stipulated in § 63.703 (b), (c)(5), and (h), the owner or operator of a magnetic tape manufacturing operation subject to this subpart shall fulfill all applicable recordkeeping requirements in § 63.10 of subpart A, as outlined in Table 1.

(b) The owner or operator of an affected source subject to this subpart that is also subject to the requirements of § 63.703(e)(1)(ii) (a minimum freeboard ratio of 75 percent), shall record whether or not the minimum freeboard ratio has been achieved every time that HAP solvent is added to the wash sink. A measurement of the actual ratio is not necessary for each record as long as the owner or operator has a reliable method for making the

required determination. For example, the record may be made by comparing the HAP solvent level to a permanent mark on the sink that corresponds to a 75 percent freeboard ratio. A HAP solvent level in the sink higher than the mark would indicate the minimum ratio has not been achieved.

(c) The owner or operator of an affected source subject to this subpart that is subject to the requirements of § 63.704(c)(10) shall:

(1) If complying with § 63.704(c)(10)(i), maintain hourly records of whether the flow indicator was operating and whether flow was detected at any time during the hour, as well as records of the times and durations of all periods when the vent stream is diverted from the control device or the monitor is not operating;

(2) If complying with § 63.704(c)(10)(ii), (iii), or (iv), maintain a record of monthly inspections, and the records of the times and durations of all periods when:

(i) Flow was diverted through any bypass line such that the seal mechanism was broken;

(ii) The key for a lock-and-key type lock had been checked out;

(iii) The valve position on any bypass line changed to the open position; or

(iv) The diversion of flow through any bypass line caused a shutdown of HAP-emitting operations.

(d) The owner or operator of an affected source that is complying with § 63.703(c) by performing a material balance in accordance with § 63.705(c)(1) shall:

(1) Maintain a record of each 7-day rolling average calculation; and

(2) Maintain a record of the certification of the accuracy of the device that measures the amount of HAP or VOC recovered.

(e) The owner or operator of a magnetic tape manufacturing operation subject to the provisions of § 63.703 (b) and (h) shall maintain records of the calculations used to determine the limits on the amount of HAP utilized as specified in § 63.703(b)(2), and of the HAP utilized in each month and the sum over each 12-month period.

(f) The owner or operator of an affected source subject to the provisions of § 63.703(c)(5) shall keep records of the

HAP content of each batch of coating applied as calculated according to §63.705(c)(5), and records of the formulation data that support the calculations. When a batch of coating applied is identical to a previous batch applied, only one set of records is required to be kept.

(g) The owner or operator of an affected source that is complying with §63.703(c)(1) through the use of a non-regenerative carbon adsorber and demonstrating initial compliance in accordance with §63.705(c)(6) shall maintain records to support the outlet VOC or HAP concentration value or the carbon replacement time established as the site-specific operating parameter to demonstrate compliance.

(h) In accordance with §63.10(b)(1) of subpart A, the owner or operator of an affected source subject to the provisions of this subpart shall retain all records required by this subpart and subpart A for at least 5 years following their collection.

**§63.707 Reporting requirements.**

(a) Except as stipulated in §63.703(b), (c)(5), and (h), the owner or operator of a magnetic tape manufacturing operation subject to this subpart shall fulfill all applicable reporting requirements in §63.7 through §63.10, as outlined in Table 1 to this subpart. These reports shall be submitted to the Administrator or delegated State.

(b) The owner or operator of an existing magnetic tape manufacturing operation subject to §63.703(b) and (h) shall include the values of the limits on the amount of HAP utilized as determined in §63.703(b)(2), along with supporting calculations, in the initial notification report required by §63.9(b).

(c) The owner or operator of a new magnetic tape manufacturing operation subject to §63.703(h) shall include the values of the limits on the amount of HAP utilized as determined in §63.703(b)(2), along with supporting calculations, and the amount of HAP expected to be utilized during the first consecutive 12-month period of operation in the initial notification report required by §63.9(b).

(d) The owner or operator subject to §63.703(c) and following the compliance provisions of §63.705(c)(1) (material bal-

ance calculation) shall include with the notification of compliance status required by §63.9(h) the results of the initial material balance calculation.

(e) The owner or operator subject to §63.703(c)(5) and following the compliance provisions of §63.705(c)(5) (low-HAP coating) shall include with the notification of compliance status required by §63.9(h) the results of the initial low-HAP coating demonstration.

(f) The owner or operator subject to the provisions of §63.703(g) and demonstrating compliance in accordance with §63.705(h)(1) shall submit to the permitting authority with the notification of compliance status required by §63.9(h) the design specifications demonstrating that the control technique meets the required efficiency. For steam strippers, these specifications shall include at a minimum: feed rate, steam rate, number of theoretical trays, number of actual trays, feed composition, bottoms composition, overheads composition, and inlet feed temperature.

(g) The owner or operator of an affected source that is complying with §63.703(c)(1) through the use of a non-regenerative carbon adsorber and demonstrating initial compliance in accordance with §63.705(c)(6) shall submit to the permitting authority with the notification of compliance status required by §63.9(h) the design evaluation.

(h) The owner or operator of an affected source that is complying with §63.703(d) through the use of a baghouse or fabric filter and demonstrating initial compliance in accordance with §63.705(g)(2) shall submit to the permitting authority with the notification of compliance status required by §63.9(h) the engineering calculations that support the minimum ventilation rate needed to capture HAP particulates for delivery to the control device.

(i) Excess emissions and continuous monitoring system performance report and summary reports shall be submitted as required by §63.10(e).

(1) The owner or operator of an affected source subject to §63.704 shall include deviations of monitored values from the operating parameter values required by §63.704(c) in the reports. In

the case of exceedances, the report must also contain a description and timing of the steps taken to address the cause of the exceedance.

(2) The owner or operator of an affected source subject to § 63.703(c)(5) shall report the HAP content of each batch of coating applied as the monitored operating parameter value in the reports.

(3) The owner or operator of an affected source subject to § 63.703(e)(1)(ii) and maintaining a minimum freeboard ratio of 75 percent shall report violations of the standard (freeboard ratio is less than 75 percent) in the reports.

(4) The owner or operator of an affected source subject to § 63.704(c)(10) of this subpart shall include records of any time period and duration of time that flow was diverted from the control device, as well as the results of monthly inspections required by § 63.704(c)(10)(ii), (iii), and (iv) in the reports.

(5) The owner or operator of an affected source complying with § 63.703(c) by performing a material balance calculation in accordance with § 63.705(c)(1) shall report any exceedances of the standard, as demonstrated through the calculation, in the reports.

(j) The owner or operator of a magnetic tape manufacturing operation subject to the provisions of § 63.703(h) shall report the amount of HAP utilized in each 12-month period in an annual report to the Administrator according to the following schedule:

(1) For existing sources, the first report shall cover the 12-month period prior to the source's compliance date and shall be submitted to the Administrator no later than 30 days after the compliance date; and

(2) For new sources, the first report shall include the quantity of HAP that is expected to be utilized during the first 12 months of operation and shall be submitted to the Administrator no later than 30 days after the compliance date;

(3) Annual reports shall be submitted to the Administrator no later than 30

days after the last 12-month period included in the report; and

(4) A report shall also be submitted no later than 30 days after monthly records required to be maintained by § 63.706(e) indicate that any limit on the amount of HAP utilized has been exceeded. The report shall indicate the amount by which the limit has been exceeded.

(k) The owner or operator establishing an alternate HAP outlet concentration limit in accordance with §§ 63.703(i) and 63.704(b)(11)(ii) shall:

(1) To support the proposed limit, submit the following within 180 days following completion of the performance test required by § 63.7:

(i) The performance test or CEM data collected to establish the limit;

(ii) Records of when coating operations were down;

(iii) The rationale for the alternate proposed limit; and

(iv) A statement signed by a responsible official of the company that the control device was operated in accordance with good air pollution control practices and in the same manner it was operated to achieve compliance with the emission limitation for coating operations; and

(2) In the excess emissions and continuous monitoring system performance report and summary report required by § 63.10(e)(3), include parameter or CEM data to demonstrate compliance or noncompliance with the alternate outlet HAP concentration established in accordance with §§ 63.703(i) and 63.704(b)(11)(ii) once the limit is approved.

**§ 63.708 Delegation of authority.**

(a) In delegating implementation and enforcement authority to a State under section 111(b) of the Clean Air Act, the authorities contained in paragraph (b) of this section shall be retained by the Administrator and not transferred to a State.

(b) Authorities which will not be delegated to States: no restrictions.

Environmental Protection Agency

Pt. 63, Subpt. EE, Table 1

TABLE 1 TO SUBPART EE—APPLICABILITY OF GENERAL PROVISIONS TO SUBPART EE

| Reference                 | Applies to subpart EE | Comment   |  |
|---------------------------|-----------------------|---|--|
| 63.1(a)(1) .....          | Yes .....             | Additional terms defined in § 63.702(a); when overlap between subparts A and EE occurs, subpart EE takes precedence.  |  |
| 63.1(a)(2)–(14) .....     | Yes.                  |   |  |
| 63.1(b)(1)–(3) .....      | Yes.                  | Subpart EE specifies the applicability of each paragraph in subpart A to sources subject to subpart EE.   |  |
| 63.1(c)(1) .....          | Yes .....             |   |  |
| 63.1(c)(2) .....          | No .....              |   |  |
| 63.1(c)(4)–(5) .....      | Yes.                  | The applicability of §§ 63.701(a)(2) and 63.703 (b) and (h) to a source does not in and of itself make a source subject to part 70.   |  |
| 63.1(e) .....             | Yes.                  |   |  |
| 63.2 .....                | Yes .....             | Additional terms defined in § 63.702(a); when overlap between subparts A and EE occurs, subpart EE takes precedence.  |  |
| 63.3 .....                | Yes .....             |   |  |
| 63.4(a)(1)–(3) .....      | Yes.                  | Units specific to subpart EE are defined in subpart EE.   |  |
| 63.4(a)(5) .....          | Yes.                  |   |  |
| 63.4(b) .....             | Yes.                  | Owners or operators of affected sources subject to subpart EE do not need to address startups and shutdowns because the emission limitations apply during these times.  |  |
| 63.4(c) .....             | Yes.                  |   |  |
| 63.5(a) .....             | Yes.                  |   |  |
| 63.5(b)(1) .....          | Yes.                  |   |  |
| 63.5(b)(3)–(6) .....      | Yes.                  |   |  |
| 63.5(d) .....             | Yes.                  |   |  |
| 63.5(e) .....             | Yes.                  |   |  |
| 63.5(f) .....             | Yes.                  |   |  |
| 63.6(a) .....             | Yes.                  |   |  |
| 63.6(b)(1)–(5) .....      | Yes.                  |   |  |
| 63.6(b)(7) .....          | Yes.                  |   |  |
| 63.6(c)(1)–(2) .....      | Yes.                  |   |  |
| 63.6(c)(5) .....          | Yes.                  |   |  |
| 63.6(e)(1)–(2) .....      | Yes.                  |   |  |
| 63.6(e)(3) .....          | Yes .....             |   | § 63.701(f) of subpart EE specifies when the standards apply.  |
| 63.6(f)(1) .....          | No .....              |   |  |
| 63.6(f)(2)(i)–(ii) .....  | Yes.                  | § 63.705(a)(3) of subpart EE includes additional circumstances under which previous capture device demonstrations are acceptable to show compliance.  |  |
| 63.6(f)(2)(iii) .....     | Yes .....             |   |  |
| 63.6(f)(2)(iv)–(v) .....  | Yes.                  | This requirement applies only for the visible emission test required under § 63.705(g)(2).  |  |
| 63.6(f)(3) .....          | Yes.                  |   |  |
| 63.6(g) .....             | Yes.                  |   |  |
| 63.6(h)(1) .....          | No .....              |   |  |
| 63.6(h)(2)(i) .....       | Yes.                  |   |  |
| 63.6(h)(2)(iii) .....     | Yes.                  |   |  |
| 63.6(h)(4) .....          | Yes .....             |   |  |
| 63.6(h)(5)(i)–(iii) ..... | Yes.                  |   |  |
| 63.6(h)(5)(v) .....       | No.                   |   |  |
| 63.6(h)(6) .....          | Yes.                  |   |  |
| 63.6(h)(7) .....          | No.                   |   |  |
| 63.6(h)(8) .....          | Yes.                  |   |  |
| 63.6(h)(9) .....          | No.                   |   |  |
| 63.6(i)(1)–(14) .....     | Yes .....             |   | § 63.703(c)(4) of subpart EE shall not be considered emissions averaging for the purposes of § 63.6(i)(4)(i)(B). |
| 63.6(i)(16) .....         | Yes.                  |   |  |
| 63.6(j) .....             | Yes.                  | § 63.7(e) establishes the minimum performance test requirements. This section does not preclude owners or operators from conducting multiple test runs under alternate operating conditions to establish an appropriate range of compliance operating parameter values in accordance with § 63.704(b)(11)(i) of subpart EE. Also as required in § 63.701(f) of subpart EE, the emissions standards apply during startup and shutdown. |  |
| 63.7(a)(1) .....          | Yes.                  |   |  |
| 63.7(a)(2)(i)–(vi) .....  | Yes.                  |   |  |
| 63.7(a)(2)(ix) .....      | Yes.                  |   |  |
| 63.7(a)(3) .....          | Yes.                  |   |  |
| 63.7(b) .....             | Yes.                  |   |  |
| 63.7(c) .....             | Yes.                  |   |  |
| 63.7(d) .....             | Yes.                  |   |  |
| 63.7(e) .....             | Yes .....             |   |  |
| 63.7(f) .....             | Yes.                  |   |  |
| 63.7(g)(1) .....          | Yes.                  |   |  |
| 63.7(g)(3) .....          | Yes.                  |   |  |
| 63.7(h) .....             | Yes.                  |   |  |
| 63.8(a)(1)–(2) .....      | Yes.                  |   |  |
| 63.8(a)(4) .....          | Yes.                  |   |  |

TABLE 1 TO SUBPART EE—APPLICABILITY OF GENERAL PROVISIONS TO SUBPART EE—Continued

| Reference                    | Applies to subpart EE | Comment  |
|------------------------------|-----------------------|--|
| 63.8(b)(1) .....             | Yes.                  |  |
| 63.8(b)(2) .....             | No .....              | § 63.704 of subpart EE specifies monitoring locations; when multiple emission points are tied to one central control device, the monitors are located at the central control device.                 |
| 63.8(b)(3) .....             | Yes.                  |  |
| 63.8(c)(1)–(3) .....         | Yes.                  | Provisions related to COMS, however, do not apply.   |
| 63.8(c)(4) .....             | Yes .....             |  |
| 63.8(c)(5) .....             | No.                   |  |
| 63.8(c)(6)–(8) .....         | Yes.                  |  |
| 63.8(d) .....                | Yes.                  |  |
| 63.8(e) .....                | Yes.                  |  |
| 63.8(f)(1)–(6) .....         | Yes.                  |  |
| 63.8(g)(1)–(5) .....         | Yes.                  |  |
| 63.9(a) .....                | Yes.                  |  |
| 63.9(b) .....                | Yes.                  |  |
| 63.9(c) .....                | Yes.                  |  |
| 63.9(d) .....                | Yes.                  |  |
| 63.9(e) .....                | Yes.                  |  |
| 63.9(f) .....                | Yes.                  |  |
| 63.9(g)(1) .....             | Yes.                  |  |
| 63.9(g)(2) .....             | No.                   |  |
| 63.9(g)(3) .....             | Yes.                  |  |
| 63.9(h)(1)–(3) .....         | Yes.                  |  |
| 63.9(h)(5)–(6) .....         | Yes.                  |  |
| 63.9(i) .....                | Yes.                  |  |
| 63.9(j) .....                | Yes.                  |  |
| 63.10(a) .....               | Yes.                  | Except information on startup and shutdown periods is not necessary because the standards apply during these time periods.   |
| 63.10(b)(1) .....            | Yes.                  |  |
| 63.10(b)(2) .....            | Yes .....             | Except information on startup and shutdown periods is not necessary because the standards apply during these times.  |
| 63.10(b)(3) .....            | Yes.                  |  |
| 63.10(c)(1) .....            | Yes.                  |  |
| 63.10(c)(5)–(8) .....        | Yes .....             | Except information on startup and shutdown periods is not necessary because the standards apply during these times.  |
| 63.10(c)(10)–(15) .....      | Yes .....             |  |
| 63.10(d)(1)–(2) .....        | Yes.                  | This requirement applies only for the visible emissions test required under § 63.705(g)(2). The results of visible emissions tests under § 63.704(e) shall be reported as required in § 63.10(e)(3). |
| 63.10(d)(3) .....            | Yes .....             |  |
| 63.10(d)(4) .....            | Yes.                  | Except information on startup and shutdown periods is not necessary because the standards apply during these times.  |
| 63.10(d)(5) .....            | Yes .....             |  |
| 63.10(e)(1) .....            | Yes.                  | Except emissions/CMS performance during startup and shutdown do not need to be specified because the standards apply during startup and shutdown.  |
| 63.10(e)(2)(i) .....         | Yes.                  |  |
| 63.10(e)(2)(ii) .....        | No.                   |  |
| 63.10(e)(3)(i)–(v) .....     | Yes.                  |  |
| 63.10(e)(3)(vi)–(viii) ..... | Yes .....             |  |
| 63.10(e)(4) .....            | No.                   |  |
| 63.10(f) .....               | Yes.                  |  |
| 63.11–63.15 .....            | Yes.                  |  |

**Subpart GG—National Emission Standards for Aerospace Manufacturing and Rework Facilities**

SOURCE: 60 FR 45956, Sept. 1, 1996, unless otherwise noted.

**§ 63.741 Applicability and designation of affected sources.**

(a) This subpart applies to facilities that are engaged, either in part or in whole, in the manufacture or rework of commercial, civil, or military aerospace vehicles or components and that are major sources as defined in § 63.2.

(b) The owner or operator of an affected source shall comply with the requirements of this subpart and of subpart A of this part, except as specified in § 63.743(a).

(c) *Affected sources.* The affected sources to which the provisions of this subpart apply are specified in § 63.741(c)(1) through (6). The activities subject to this subpart are limited to the manufacture or rework of aerospace vehicles or components as defined in this subpart, except for requirements pertaining to cleaning solvents. Paragraphs (c)(2) through (c)(6) of this section are not applicable to non-aerospace activities.

(1) Each cleaning operation as follows:

(i) All hand-wipe cleaning operations constitute an affected source.

(ii) Each spray gun cleaning operation constitutes an affected source.

(iii) All flush cleaning operations constitute an affected source.

(2) Each primer application operation, which is the total of all primer applications at the facility.

(3) Each topcoat application operation, which is the total of all topcoat applications at the facility.

(4) Each depainting operation, which is the total of all depainting at the facility.

(5) Each chemical milling maskant application operation, which is the total of all chemical milling maskant applications at the facility.

(6) Each waste storage and handling operation, which is the total of all waste handling and storage at the facility.

(d) An owner or operator of an affected source subject to this subpart shall obtain an operating permit from the permitting authority in the State in which the source is located. The owner or operator shall apply for and obtain such permit in accordance with the regulations contained in part 70 of this chapter and in applicable State regulations.

(e) All wastes that are determined to be hazardous wastes under the Resource Conservation and Recovery Act of 1976 (PL 94-580) (RCRA) as implemented by 40 CFR parts 260 and 261, and that are subject to RCRA requirements as implemented in 40 CFR parts

262 through 268, are exempt from the requirements of this subpart.

(f) This subpart does not contain control requirements for use of specialty coatings, adhesives, adhesive bonding primers, or sealants at aerospace facilities. It also does not regulate research and development, quality control, and laboratory testing activities, chemical milling, metal finishing, electrodeposition (except for electrodeposition of paints), composites processing (except for cleaning and coating of composite parts or components that become part of an aerospace vehicle or component as well as composite tooling that comes in contact with such composite parts or components prior to cure), electronic parts and assemblies (except for cleaning and topcoating of completed assemblies), manufacture of aircraft transparencies, and wastewater operations at aerospace facilities. These requirements also do not apply to parts and assemblies not critical to the vehicle's structural integrity or flight performance or to vehicles that are designed to travel beyond the limit of the earth's atmosphere. The requirements of this subpart also do not apply to primers, topcoats, chemical milling maskants, strippers, and cleaning solvents containing HAP or VOC at a concentration less than 0.1% for carcinogens or 1.0% for noncarcinogens, as determined from manufacturer's representations. Additional specific exemptions from regulatory coverage are set forth in § 63.741(e), .744(a)(1), (b), (e), .745(a), (f)(3), (g)(4), .746(a), (b)(5), .747(c)(3), and .749(d).

(g) The requirements for primers, topcoats, and chemical milling maskants in § 63.745 and § 63.747 do not apply to the use of low-volume coatings in these categories for which the annual total of each separate formulation used at a facility does not exceed 189 l (50 gal), and the combined annual total of all such primers, topcoats, and chemical milling maskants used at a facility does not exceed 757 l (200 gal). Primers and topcoats exempted under paragraph (f) of this section and under § 63.745(f)(3) and (g)(4) are not included in the 50 and 200 gal limits. Chemical milling maskants exempted under

§ 63.747(c)(3) are also not included in these limits.

**§ 63.742 Definitions.**

Terms used in this subpart are defined in the Act, in subpart A of this part, or in this section as follows:

*Aerospace facility* means any facility that produces, reworks, or repairs in any amount any commercial, civil, or military aerospace vehicle or component.

*Aerospace vehicle or component* means any fabricated part, processed part, assembly of parts, or completed unit, with the exception of electronic components, of any aircraft including but not limited to airplanes, helicopters, missiles, rockets, and space vehicles.

*Aircraft fluid systems* means those systems that handle hydraulic fluids, fuel, cooling fluids, or oils.

*Aircraft transparency* means the aircraft windshield, which is typically constructed of laminated layers of glass and other transparent materials.

*Carbon adsorber* means one vessel in a series of vessels in a carbon adsorption system that contains carbon and is used to remove gaseous pollutants from a gaseous emission source.

*Carbon Adsorber control efficiency* means the total efficiency of the control system, determined by the product of the capture efficiency and the control device efficiency.

*Chemical milling maskant* means a coating that is applied directly to aluminum components to protect surface areas when chemical milling the component with a Type II etchant. This does not include maskants used with Type I etchants, bonding maskants, line sealers, and critical use and seal coat maskants. Additionally, maskants that must be used on an individual part or subassembly with a combination of Type II etchants and any of the above types of maskants (e.g. Type I compatible, bonding, line sealers, and critical use and seal coat) are also exempt from this subpart.

*Chemical milling maskant application operation* means application of chemical milling maskant for use in Type II chemical milling etchants.

*Cleaning operation* means collectively spray gun, hand-wipe, and flush cleaning operations.

*Cleaning solvent* means a liquid material used for hand-wipe, spray gun, or flush cleaning. This definition does not include solutions that contain no HAP or VOC.

*Coating* means a material that is applied to the surface of an aerospace vehicle or component to form a decorative or functional solid film, or the solid film itself.

*Coating operation* means the use of a spray booth, tank, or other enclosure or any area, such as a hangar, for the application of a single type of coating (e.g., primer); the use of the same spray booth for the application of another type of coating (e.g., topcoat) constitutes a separate coating operation for which compliance determinations are performed separately.

*Coating unit* means a series of one or more coating applicators and any associated drying area and/or oven wherein a coating is applied, dried, and/or cured. A coating unit ends at the point where the coating is dried or cured, or prior to any subsequent application of a different coating. It is not necessary to have an oven or flashoff area in order to be included in this definition.

*Confined space* means a space that: (1) Is large enough and so configured that an employee can bodily enter and perform assigned work; (2) has limited or restricted means for entry or exit (for example, fuel tanks, fuel vessels, and other spaces that have limited means of entry); and (3) is not suitable for continuous employee occupancy.

*Control device* means destruction and/or recovery equipment used to destroy or recover HAP or VOC emissions generated by a regulated operation.

*Control system* means a combination of pollutant capture system(s) and control device(s) used to reduce discharge to the atmosphere of HAP or VOC emissions generated by a regulated operation.

*Depainting* means the removal of a permanent coating from the outer surface of an aerospace vehicle or component, whether by chemical or non-chemical means. For non-chemical means, this definition excludes hand and mechanical sanding, and any other non-chemical removal processes that do not involve blast media or other

mechanisms that would result in airborne particle movement at high velocity.

*Depainting operation* means the use of a chemical agent, media blasting, or any other technique to remove permanent coatings from the outer surface of an aerospace vehicle or components. The depainting operation includes washing of the aerospace vehicle or component to remove residual stripper, media, or coating residue.

*Electrodeposition of paint* means the application of a coating using a water-based electrochemical bath process. The component being coated is immersed in a bath of the coating. An electric potential is applied between the component and an oppositely charged electrode hanging in the bath. The electric potential causes the ionized coating to be electrically attracted, migrated, and deposited on the component being coated.

*Electrostatic spray coating* means a method of applying a spray coating in which an electrical charge is applied to the coating and the substrate is grounded. The coating is attracted to the substrate by the electrostatic potential between them.

*Exempt solvent* means specified organic compounds that have been determined by the EPA to have negligible photochemical reactivity and are listed in 40 CFR 51.100.

*Flush cleaning* means the removal of contaminants such as dirt, grease, oil, and coatings from an aerospace vehicle or component or coating equipment by passing solvent over, into, or through the item being cleaned. The solvent may simply be poured into the item being cleaned and then drained, or be assisted by air or hydraulic pressure, or by pumping. Hand-wipe cleaning operations where wiping, scrubbing, mopping, or other hand action are used are not included.

*Hand-wipe cleaning operation* means the removal of contaminants such as dirt, grease, oil, and coatings from an aerospace vehicle or component by physically rubbing it with a material such as a rag, paper, or cotton swab that has been moistened with a cleaning solvent.

*Hazardous air pollutant (HAP)* means any air pollutant listed in or pursuant to section 112(b) of the Act.

*High efficiency particulate air (HEPA) filter* means a filter that has a 99.97 percent reduction efficiency for 0.3 micron aerosol.

*High volume low pressure (HVLP) spray equipment* means spray equipment that is used to apply coating by means of a spray gun that operates at 10.0 psig or less at the air cap and a fluid delivery pressure of 100 psig or less.

*Inorganic hazardous air pollutant (HAP)* means any HAP that is not organic.

*Leak* means any visible leakage, including misting and clouding.

*Limited access space* means internal surfaces or passages of an aerospace vehicle or component that cannot be reached without the aid of an airbrush or a spray gun extension for the application of coatings.

*Mechanical sanding* means aerospace vehicle or component surface conditioning which uses directional and random orbital abrasive tools and aluminum oxide or nylon abrasive pads for the purpose of corrosion rework, substrate repair, prepaint surface preparation, and other maintenance activities.

*Natural draft opening* means any opening in a room, building, or total enclosure that remains open during operation of the facility and that is not connected to a duct in which a fan is installed. The rate and direction of the natural draft through such an opening is a consequence of the difference in pressures on either side of the wall containing the opening.

*Non-chemical based depainting equipment* means any depainting equipment or technique, including, but not limited to, media blasting equipment, that can repaint an aerospace vehicle or component in the absence of a chemical stripper. This definition does not include mechanical sanding or hand sanding.

*Nonregenerative carbon adsorber* means a carbon adsorber vessel in which the spent carbon bed does not undergo carbon regeneration in the adsorption vessel.

*Operating parameter value* means a minimum or maximum value established for a control device or process

parameter which, if achieved by itself or in combination with one or more other operating parameter values, determines that an owner or operator has complied with an applicable emission limitation.

*Organic hazardous air pollutant (HAP)* means any HAP that is organic.

*Primer* means the first layer and any subsequent layers of identically formulated coating applied to the surface of an aerospace vehicle or component. Primers are typically used for corrosion prevention, protection from the environment, functional fluid resistance, and adhesion of subsequent coatings. Coatings that are defined as specialty coatings are not included under this definition.

*Radome* means the non-metallic protective housing for electromagnetic transmitters and receivers (e.g., radar, electronic countermeasures, etc.).

*Research and Development* means an operation whose primary purpose is for research and development of new processes and products, that is conducted under the close supervision of technically trained personnel, and is not involved in the manufacture of final or intermediate products for commercial purposes, except in a de minimis manner.

*Self-priming topcoat* means a topcoat that is applied directly to an uncoated aerospace vehicle or component for purposes of corrosion prevention, environmental protection, and functional fluid resistance. More than one layer of identical coating formulation may be applied to the vehicle or component. The coating is not subsequently topcoated with any other product formulation.

*Semi-aqueous cleaning solvent* means a solution in which water is a primary ingredient ("60 percent of the solvent solution as applied must be water.")

*Softener* means a liquid that is applied to an aerospace vehicle or component to degrade coatings such as primers and topcoats specifically as a preparatory step to subsequent depainting by non-chemical based depainting equipment. Softeners may contain VOC but shall not contain any HAP as determined from MSDS's or manufacturer supplied information.

*Solids* means the non-volatile portion of the coating which after drying makes up the dry film.

*Space vehicle* means a man-made device, either manned or unmanned, designed for operation beyond earth's atmosphere. This definition includes integral equipment such as models, mock-ups, prototypes, molds, jigs, tooling, hardware jackets, and test coupons. Also included is auxiliary equipment associated with test, transport, and storage, which through contamination can compromise the space vehicle performance.

*Specialty coating* means a coating that, even though it meets the definition of a primer, topcoat, or self-priming topcoat, has additional performance criteria beyond those of primers, topcoats, and self-priming topcoats for specific applications. These performance criteria may include, but are not limited to, temperature or fire resistance, substrate compatibility, antireflection, temporary protection or marking, sealing, adhesively joining substrates, or enhanced corrosion protection.

*Spot stripping* means the depainting of an area where it is not technically feasible to use a non-chemical depainting technique.

*Spray gun* means a device that atomizes a coating or other material and projects the particulates or other material onto a substrate.

*Stripper* means a liquid that is applied to an aerospace vehicle or component to remove permanent coatings such as primers and topcoats.

*Surface preparation* means the removal of contaminants from the surface of an aerospace vehicle or component, or the activation or reactivation of the surface in preparation for the application of a coating.

*Temporary total enclosure* means a total enclosure that is constructed for the sole purpose of measuring the emissions from an affected source that are not delivered to an emission control device. A temporary total enclosure must be constructed and ventilated (through stacks suitable for testing) so that it has minimal impact on the performance of the permanent emission capture system. A temporary total enclosure will be assumed to achieve

total capture of fugitive emissions if it conforms to the requirements found in §63.750(g)(4) and if all natural draft openings are at least four duct or hood equivalent diameters away from each exhaust duct or hood. Alternatively, the owner or operator may apply to the Administrator for approval of a temporary enclosure on a case-by-case basis.

*Topcoat* means a coating that is applied over a primer on an aerospace vehicle or component for appearance, identification, camouflage, or protection. Coatings that are defined as specialty coatings are not included under this definition.

*Total enclosure* means a permanent structure that is constructed around a gaseous emission source so that all gaseous pollutants emitted from the source are collected and ducted through a control device, such that 100% capture efficiency is achieved. There are no fugitive emissions from a total enclosure. The only openings in a total enclosure are forced makeup air and exhaust ducts and any natural draft openings such as those that allow raw materials to enter and exit the enclosure for processing. All access doors or windows are closed during routine operation of the enclosed source. Brief, occasional openings of such doors or windows to accommodate process equipment adjustments are acceptable, but if such openings are routine or if an access door remains open during the entire operation, the access door must be considered a natural draft opening. The average inward face velocity across the natural draft openings of the enclosure must be calculated including the area of such access doors. The drying oven itself may be part of the total enclosure. An enclosure that meets the requirements found in §63.750(g)(4) is a permanent total enclosure.

*Touch-up and repair operation* means that portion of the coating operation that is the incidental application of coating used to cover minor imperfections in the coating finish or to achieve complete coverage. This definition includes out-of-sequence or out-of-cycle coating.

*Two-stage filter system* means a dry particulate filter system using two layers of filter media to remove particu-

late. The first stage is designed to remove the bulk of the particulate and a higher efficiency second stage is designed to remove smaller particulate.

*Type II etchant* means a chemical milling etchant that is a strong sodium hydroxide solution containing amines (Type I etchants contain varying amounts of dissolved sulfur and do not contain amines).

*Volatile organic compound (VOC)* means any compound defined as VOC in 40 CFR 51.100. This includes any organic compound other than those determined by the EPA to be an exempt solvent. For purposes of determining compliance with emission limits, VOC will be measured by the approved test methods. Where such a method also inadvertently measures compounds that are exempt solvent, an owner or operator may exclude these exempt solvents when determining compliance with an emission standard.

*Waterwash system* means a control system that utilizes flowing water to remove particulate emissions from the exhaust air stream in spray coating application or dry media blast depainting operations.

*Nomenclature for determining carbon adsorber efficiency*—The nomenclature defined below is used in §63.750(g):

(1)  $A_k$  = the area of each natural draft opening (k) in a total enclosure, in square meters.

(2)  $C_{aj}$  = the concentration of HAP or VOC in each gas stream (j) exiting the emission control device, in parts per million by volume.

(3)  $C_{bi}$  = the concentration of HAP or VOC in each gas stream (i) entering the emission control device, in parts per million by volume.

(4)  $C_{di}$  = the concentration of HAP or VOC in each gas stream (i) entering the emission control device from the affected source, in parts per million by volume.

(5)  $C_{nk}$  = the concentration of HAP or VOC in each uncontrolled gas stream (k) emitted directly to the atmosphere from the affected source, in parts per million by volume.

(6)  $C_{gv}$  = the concentration of HAP or VOC in each uncontrolled gas stream entering each individual carbon adsorber vessel (v), in parts per million

by volume. For the purposes of calculating the efficiency of the individual carbon adsorber vessel,  $C_{gv}$  may be measured in the carbon adsorption system's common inlet duct prior to the branching of individual inlet ducts to the individual carbon adsorber vessels.

(7)  $C_{hv}$  = the concentration of HAP or VOC in the gas stream exiting each individual carbon adsorber vessel (v), in parts per million by volume.

(8)  $E$  = the control device efficiency achieved for the duration of the emission test (expressed as a fraction).

(9)  $F$  = the HAP or VOC emission capture efficiency of the HAP or VOC capture system achieved for the duration of the emission test (expressed as a fraction).

(10)  $FV$  = the average inward face velocity across all natural draft openings in a total enclosure, in meters per hour.

(11)  $H_v$  = the individual carbon adsorber vessel (v) efficiency achieved for the duration of the emission test (expressed as a fraction).

(12)  $H_{sys}$  = the efficiency of the carbon adsorption system calculated when each carbon adsorber vessel has an individual exhaust stack (expressed as a fraction).

(13)  $M_{ci}$  = the total mass in kilograms of each batch of coating (i) applied, or of each coating applied at an affected coating operation during a 7 to 30-day period, as appropriate, as determined from records at the affected source. This quantity shall be determined at a time and location in the process after all ingredients (including any dilution solvent) have been added to the coating, or if ingredients are added after the mass of the coating has been determined, appropriate adjustments shall be made to account for them.

(14)  $M_r$  = the total mass in kilograms of HAP or VOC recovered for a 7 to 30-day period.

(15)  $Q_{aj}$  = the volumetric flow rate of each gas stream (j) exiting the emission control device in either dry standard cubic meters per hour when EPA Method 18 in appendix A of part 60 is used to measure HAP or VOC concentration or in standard cubic meters per hour (wet basis) when EPA Method 25A is used to measure HAP or VOC concentration.

(16)  $Q_{bi}$  = the volumetric flow rate of each gas stream (i) entering the emission control device, in dry standard cubic meters per hour when EPA Method 18 is used to measure HAP or VOC concentration or in standard cubic meters per hour (wet basis) when EPA Method 25A is used to measure HAP or VOC concentration.

(17)  $Q_{di}$  = the volumetric flow rate of each gas stream (i) entering the emission control device from the affected source in either dry standard cubic meters per hour when EPA Method 18 is used to measure HAP or VOC concentration or in standard cubic meters per hour (wet basis) when EPA Method 25A is used to measure HAP or VOC concentration.

(18)  $Q_{rk}$  = the volumetric flow rate of each uncontrolled gas stream (k) emitted directly to the atmosphere from the affected source in either dry standard cubic meters per hour when EPA Method 18 is used to measure HAP or VOC concentration or in standard cubic meters per hour (wet basis) when EPA Method 25A is used to measure HAP or VOC concentration.

(19)  $Q_{gv}$  = the volumetric flow rate of each gas stream entering each individual carbon adsorber vessel (v) in either dry standard cubic meters per hour when EPA Method 18 is used to measure HAP or VOC concentration or in standard cubic meters per hour (wet basis) when EPA Method 25A is used to measure HAP or VOC concentration. For purposes of calculating the efficiency of the individual carbon adsorber vessel, the value of  $Q_{gv}$  can be assumed to equal the value of  $Q_{hv}$  measured for that carbon adsorber vessel.

(20)  $Q_{hv}$  = the volumetric flow rate of each gas stream exiting each individual carbon adsorber vessel (v) in either dry standard cubic meters per hour when EPA Method 18 is used to measure HAP or VOC concentration or in standard cubic meters per hour (wet basis) when EPA Method 25A is used to measure HAP or VOC concentration.

(21)  $Q_{ini}$  = the volumetric flow rate of each gas stream (i) entering the total enclosure through a forced makeup air duct in standard cubic meters per hour (wet basis).

(22)  $Q_{outj}$  = the volumetric flow rate of each gas stream (j) exiting the total

enclosure through an exhaust duct or hood in standard cubic meters per hour (wet basis).

(23)  $R$  = the overall HAP or VOC emission reduction achieved for the duration of the emission test (expressed as a percentage).

(24)  $RS_i$  = the total mass in kilograms of HAP or VOC retained in the coating after drying.

(25)  $W_{oi}$  = the weight fraction of VOC in each batch of coating (i) applied, or of each coating applied at an affected coating operation during a 7- to 30-day period, as appropriate, as determined by EPA Method 24 or formulation data. This value shall be determined at a time and location in the process after all ingredients (including any dilution solvent) have been added to the coating, or if ingredients are added after the weight fraction of HAP or VOC in the coating has been determined, appropriate adjustments shall be made to account for them.

**§ 63.743 Standards: General.**

(a) Except as provided in paragraphs (a)(4) through (a)(9) of this section and in Table 2 (included in Appendix B to this subpart), each owner or operator of an affected source subject to this subpart is also subject to the following sections of subpart A of this part:

(1) § 63.4, Prohibited activities and circumvention;

(2) § 63.5, Construction and reconstruction; and

(3) § 63.6, Compliance with standards and maintenance requirements.

(4) For the purposes of this subpart, all affected sources shall submit any request for an extension of compliance not later than 120 days before the affected source's compliance date. The extension request should be requested for the shortest time necessary to attain compliance, but in no case shall exceed 1 year.

(5)(i) For the purposes of this subpart, the Administrator (or the State with an approved permit program) will notify the owner or operator in writing of his/her intention to deny approval of a request for an extension of compliance submitted under either § 63.6(i)(4) or § 63.6(i)(5) within 60 calendar days after receipt of sufficient information to evaluate the request.

(ii) In addition, for purposes of this subpart, if the Administrator does not notify the owner or operator in writing of his/her intention to deny approval within 60 calendar days after receipt of sufficient information to evaluate a request for an extension of compliance, then the request shall be considered approved.

(6)(i) For the purposes of this subpart, the Administrator (or the State) will notify the owner or operator in writing of the status of his/her application submitted under § 63.6(i)(4)(ii) (that is, whether the application contains sufficient information to make a determination) within 30 calendar days after receipt of the original application and within 30 calendar days after receipt of any supplementary information that is submitted, rather than 15 calendar days as provided for in § 63.6(i)(13)(i).

(ii) In addition, for the purposes of this subpart, if the Administrator does not notify the owner or operator in writing of the status of his/her application within 30 calendar days after receipt of the original application and within 30 calendar days after receipt of any supplementary information that is submitted, then the information in the application or the supplementary information is to be considered sufficient upon which to make a determination.

(7) For the purposes of this subpart, each owner or operator who has submitted an extension request application under § 63.6(i)(5) is to be provided 30 calendar days to present additional information or arguments to the Administrator after he/she is notified that the application is not complete, rather than 15 calendar days as provided for in § 63.6(i)(13)(ii).

(8) For the purposes of this subpart, each owner or operator is to be provided 30 calendar days to present additional information to the Administrator after he/she is notified of the intended denial of a compliance extension request submitted under either § 63.6(i)(4) or § 63.6(i)(5), rather than 15 calendar days as provided for in § 63.6(1)(12)(iii)(B) and § 63.6(i)(13)(iii)(B).

(9) For the purposes of this subpart, a final determination to deny any request for an extension submitted under either § 63.6(i)(4) or § 63.6(i)(5) will be

made within 60 calendar days after presentation of additional information or argument (if the application is complete), or within 60 calendar days after the final date specified for the presentation if no presentation is made, rather than 30 calendar days as provided for in § 63.6(i)(12)(iv) and § 63.6(i)(13)(iv).

(b) *Operation and maintenance plan.* Each owner or operator that uses an air pollution control device or equipment to control HAP emissions shall prepare and operate in accordance with a startup, shutdown, and malfunction plan in accordance with § 63.6. Dry particulate filter systems operated per the manufacturer's instructions are exempt from a startup and shutdown plan. A startup and shutdown plan shall be prepared for facilities using locally prepared operating procedures. In addition to the information required in § 63.6, this plan shall also include the following provisions:

- (1) The plan shall specify the operation and maintenance criteria for each air pollution control device or equipment and shall include a standardized checklist to document the operation and maintenance of the equipment;
- (2) The plan shall include a systematic procedure for identifying malfunc-

tions and for reporting them immediately to supervisory personnel; and

(3) The plan shall specify procedures to be followed to ensure that equipment or process malfunctions due to poor maintenance or other preventable conditions do not occur.

(c) An owner or operator who uses an air pollution control device or equipment not listed in this subpart shall submit a description of the device or equipment, test data verifying the performance of the device or equipment in controlling organic HAP and/or VOC emissions, as appropriate, specific operating parameters that will be monitored to establish compliance with the standards, and a copy of the operation and maintenance plan referenced in paragraph (b) of this section to the Administrator for approval.

**§ 63.744 Standards: Cleaning operations.**

(a) *Housekeeping measures.* Each owner or operator of a new or existing cleaning operation subject to this subpart shall comply with the requirements in this paragraphs unless the solvent used is classified as a cleaning solvent that contains no organic HAP or VOC as identified in Table 3.

TABLE 3.—COMPOSITION REQUIREMENTS FOR APPROVED CLEANING SOLVENTS

| Cleaning solvent type   | Composition requirements  |
|-------------------------|---|
| Aqueous .....           | Cleaning solvents in which water is the primary ingredient (≥80 percent of solvent solution as applied must be water). Detergents, surfactants, and bioenzyme mixtures and nutrients may be combined with the water along with a variety of additives such as organic solvents (e.g., high boiling point alcohols), builders, saponifiers, inhibitors, emulsifiers, pH buffers, and antifoaming agents. Aqueous solutions must have a flash point greater than 93 °C (200 °F) (as reported by the manufacturer) and the solution must be miscible with water. |
| Hydrocarbon-Based ..... | Cleaners that are composed of a mixture of photochemically reactive hydrocarbons and oxygenated hydrocarbons and have a maximum vapor pressure of 7 mm Hg at 20 °C (3.75 in. H <sub>2</sub> O at 68 °F). These cleaners also contain no HAP or ozone depleting compounds.   |

(1) Place solvent-laden cloth, paper, or any other absorbent applicators used for cleaning aerospace vehicles or components in bags or other closed containers immediately after use. Ensure that these bags and containers are kept closed at all times except when depositing or removing these materials from the container. Use bags and containers of such design so as to contain the vapors of the cleaning solvent. Cot-

ton-tipped swabs used for very small cleaning operations are exempt from this requirement.

(2) Store fresh and spent cleaning solvents used in aerospace cleaning operations in closed containers.

(3) Conduct the handling and transfer of cleaning solvents to or from enclosed systems, vats, waste containers, and other cleaning operation equipment that hold or store fresh or spent

cleaning solvents in such a manner that minimizes spills.

(b) *Hand-wipe cleaning.* Each owner or operator of a new or existing hand-wipe cleaning operation (excluding cleaning of spray gun equipment performed in accordance with paragraph (c)(3) of this section) subject to this subpart shall use cleaning solvents that meet one of the requirements specified in paragraphs (b)(1), (b)(2), and (b)(3) of this section. Cleaning solvent solutions that contain no HAP or VOC are exempt from the requirements in paragraphs (b)(1), (b)(2), and (b)(3).

(1) Meet one of the composition requirements in Table 3;

(2) Have a composite vapor pressure of 45 mm Hg (24.1 in. H<sub>2</sub>O) or less at 20 °C (68 °F); or

(3) Demonstrate that the volume of hand-wipe solvents used in cleaning operations has been reduced by at least 60% from a baseline adjusted for production. The baseline shall be established as part of an approved alternative plan administered by the State. The alternative plan shall be submitted by the State under section 112(l) of the Act and approved by the Administrator, and shall demonstrate that the 60% volume reduction in cleaning solvents provides equivalent reductions to the requirements in paragraph (b)(1) or (b)(2).

(c) *Spray gun cleaning.* Each owner or operator of a new or existing spray gun cleaning operation subject to this subpart in which spray guns are used for the application of coatings or any other materials that require the spray guns to be cleaned shall use one or more of the techniques, or their equivalent, specified in paragraphs (c)(1) through (c)(4) of this section.

(1)(i) Enclosed system. Clean the spray gun in an enclosed system that is closed at all times except when inserting or removing the spray gun. Cleaning shall consist of forcing solvent through the gun.

(ii) If leaks are found during the monthly inspection required in §63.751(a), repairs shall be made as soon as practicable, but no later than 15 days after the leak was found. If the leak is not repaired by the 15th day after detection, the solvent shall be removed and the enclosed cleaner shall

be shut down until the leak is repaired or its use is permanently discontinued.

(2) Nonatomized cleaning. Clean the spray gun by placing solvent in the pressure pot and forcing it through the gun with the atomizing cap in place. No atomizing air is to be used. Direct the solvent from the spray gun into a vat, drum, or other waste container that is closed when not in use.

(3) Disassembled spray gun cleaning. Disassemble the spray gun and clean the components by hand in a vat, which shall remain closed at all times except when in use. Alternatively, soak the components in a vat, which shall remain closed during the soaking period and when not inserting or removing components.

(4) Atomizing cleaning. Clean the spray gun by forcing the solvent through the gun and direct the resulting atomized spray into a waste container that is fitted with a device designed to capture the atomized solvent emissions.

(d) *Flush cleaning.* Each owner or operator of a flush cleaning operation subject to this subpart (excluding those in which Table 3 or semi-aqueous cleaning solvents are used) shall empty the used cleaning solvent each time an aerospace part or assembly, or a component of a coating unit (with the exception of spray guns) is flush cleaned into an enclosed container or collection system that is kept closed when not in use or into a system with equivalent emission control.

(e) *Exempt cleaning operations.* The following cleaning operations are exempt from the requirements of paragraph (b) of this section:

(1) Cleaning during the manufacture, assembly, installation, or testing of components of breathing oxygen systems that are exposed to the breathing oxygen;

(2) Cleaning during the manufacture, assembly, installation, or testing of parts, subassemblies, or assemblies that are exposed to strong oxidizers or reducers (e.g., nitrogen tetroxide, liquid oxygen, or hydrazine);

(3) Cleaning and surface activation prior to adhesive bonding;

(4) Cleaning of electronic parts and assemblies containing electronic parts;

(5) Cleaning of aircraft and ground support equipment fluid systems that are exposed to the fluid, including air-to-air heat exchangers and hydraulic fluid systems;

(6) Cleaning of fuel cells, fuel tanks, and confined spaces;

(7) Surface cleaning of solar cells, coated optics, and thermal control surfaces;

(8) Cleaning during fabrication, assembly, installation, and maintenance of upholstery, curtains, carpet, and other textile materials used in the interior of the aircraft;

(9) Cleaning of metallic and non-metallic materials used in honeycomb cores during the manufacture of these cores, and cleaning of the completed cores used in the manufacture of aerospace vehicles or components;

(10) Cleaning of polycarbonate or glass substrates; and

(11) Cleaning and solvent usage associated with research and development, quality control, and laboratory testing.

(12) Cleaning operations, using nonflammable liquids, conducted within five feet of energized electrical systems. Energized electrical systems means any AC or DC electrical circuit on an assembled aircraft once electrical power is connected, including interior passenger and cargo areas, wheel wells and tail sections.

**§ 63.745 Standards: Primer and topcoat application operations.**

(a) Each owner or operator of a new or existing primer or topcoat application operation subject to this subpart shall comply with the requirements specified in paragraph (c) of this section for those coatings that are uncontrolled (no control device is used to reduce organic HAP emissions from the operation), and in paragraph (d) of this section for those coatings that are controlled (organic HAP emissions from the operation are reduced by the use of a control device). Aerospace equipment that is no longer operational, intended for public display, and not easily capable of being moved is exempt from the requirements of this section.

(b) Each owner or operator shall conduct the handling and transfer of primers and topcoats to or from containers,

tanks, vats, vessels, and piping systems in such a manner that minimizes spills.

(c) *Uncontrolled coatings—organic HAP and VOC content levels.* Each owner or operator shall comply with the organic HAP and VOC content limits specified in paragraphs (c)(1) through (c)(4) of this section for those coatings that are uncontrolled.

(1) Organic HAP emissions from primers shall be limited to an organic HAP content level of no more than 350 g/l (2.9 lb/gal) of primer (less water) as applied.

(2) VOC emissions from primers shall be limited to an VOC content level of no more than 350 g/l (2.9 lb/gal) of primer (less water and exempt solvents) as applied.

(3) Organic HAP emissions from topcoats shall be limited to an organic HAP content level of no more than 420 g/l (3.5 lb/gal) of coating (less water) as applied. Organic HAP emissions from self-priming topcoats shall be limited to an organic HAP content level of no more than 420 g/l (3.5 lb/gal) of self-priming topcoat (less water) as applied.

(4) VOC emissions from topcoats shall be limited to a VOC content level of no more than 420 g/l (3.5 lb/gal) of coating (less water and exempt solvents) as applied. VOC emissions from self-priming topcoats shall be limited to a VOC content level of no more than 420 g/l (3.5 lb/gal) of self-priming topcoat (less water and exempt solvents) as applied.

(d) *Controlled coatings—control system requirements.* Each control system shall reduce the operation's organic HAP and VOC emissions to the atmosphere by 81% or greater, taking into account capture and destruction or removal efficiencies, as determined using the procedures in § 63.750(g) when a carbon adsorber is used and in § 63.750(h) when a control device other than a carbon adsorber is used.

(e) *Compliance methods.* Compliance with the organic HAP and VOC content limits specified in paragraphs (c)(1) through (c)(4) of this section shall be accomplished by using the methods specified in paragraphs (e)(1) and (e)(2) of this section either by themselves or in conjunction with one another.

(1) Use primers and topcoats with HAP and VOC content levels equal to

or less than the limits specified in paragraphs (c)(1) through (c)(4) of this section.

(2)(i) Use any combination of primers or topcoats such that the monthly volume-weighted average organic HAP and VOC contents of the combination of primers or topcoats comply with the specified content limits, unless the permitting agency specifies a shorter averaging period as part of an ambient ozone control program.

(ii) Averaging primers together with topcoats is prohibited under this subsection.

(iii) Averaging is allowed only for uncontrolled primers or topcoats.

(iv) Each averaging scheme shall be approved in advance by the permitting agency and be adopted as part of the facility's title V permit.

(f) *Application Equipment.* Except as provided in paragraph (f)(3) of this section, each owner or operator of a new or existing primer or topcoat application operation subject to this subpart in which any of the coatings contain organic HAP or VOC shall comply with the requirements specified in paragraphs (f)(1) and (f)(2) of this section.

(1) All primers and topcoats shall be applied using one or more of the application techniques specified in paragraphs (f)(1)(i) through (f)(1)(viii) of this section.

- (i) Flow/curtain coat application;
- (ii) Dip coat application;
- (iii) Roll coating;
- (iv) Brush coating;
- (v) Cotton-tipped swab application;
- (vi) Electrodeposition (dip) coating;
- (vii) High volume low pressure (HVLP) spraying;
- (viii) Electrostatic spray application;

or

(ix) Other coating application methods that achieve emission reductions equivalent to HVLP or electrostatic spray application methods, as determined according to the requirements in § 63.750(i).

(2) All application devices used to apply primers or topcoats shall be operated according to company procedures, local specified operating procedures, and/or the manufacturer's specifications, whichever is most stringent, at all times. Equipment modified by the facility shall maintain a transfer

efficiency equivalent to HVLP and electrostatic spray application techniques.

(3) The following situations are exempt from the requirements of paragraph (f)(1) of this section:

(i) Any situation that normally requires the use of an airbrush or an extension on the spray gun to properly reach limited access spaces;

(ii) The application of coatings that contain fillers that adversely affect atomization with HVLP spray guns and that the permitting agency has determined cannot be applied by any of the application methods specified in paragraph (f)(1) of this section;

(iii) The application of coatings that normally have a dried film thickness of less than 0.0013 centimeter (0.0005 in.) and that the permitting agency has determined cannot be applied by any of the application methods specified in paragraph (f)(1) of this section;

(iv) The use of airbrush application methods for stenciling, lettering, and other identification markings;

(v) The use of hand-held spray can application methods; and

(vi) Touch-up and repair operations.

(g) *Inorganic HAP emissions.* Except as provided in paragraph (g)(4) of this section, each owner or operator of a new or existing primer or topcoat application operation subject to this subpart in which any of the coatings that are spray applied contain inorganic HAP, shall comply with the applicable requirements in paragraphs (g)(1) through (g)(3) of this section.

(1) Apply these coatings in a booth or hangar in which air flow is directed downward onto or across the part or assembly being coated and exhausted through one or more outlets.

(2) Control the air stream from this operation as follows:

(i) For existing sources, pass the air stream through either a dry particulate filter system or a waterwash system before exhausting it to the atmosphere.

(ii) Waterwash booths shall remain in operation during all coating application operations.

(iii) Dry filter booths shall include two-stage filter systems or the equivalent, as determined by the permitting agency.

(iv) For new sources, pass the air stream through either a two-stage dry particulate filter system or a waterwash system before exhausting it to the atmosphere. If the primer or topcoat contains chromium or cadmium, control shall consist of either a three-stage filter system, HEPA filter system, or other equivalent control system as approved by the permitting agency.

(v) If a dry particulate filter system is used, the following requirements shall be met:

(A) Maintain the system in good working order;

(B) Install a differential pressure gauge across the filter banks;

(C) Continuously monitor the pressure drop across the filter; and

(D) Take corrective action when the pressure drop exceeds or falls below the filter manufacturer's recommended limit(s).

(vi) If a waterwash system is used, continuously monitor the water flow rate.

(3) If the pressure drop across the dry particulate filter system, as recorded pursuant to §63.752(d)(1), is outside the limit(s) specified by the filter manufacturer or in locally prepared operating procedures, shut down the operation immediately and take corrective action. If the water path in the waterwash system fails the visual continuity/flow characteristics check, or the water flow rate recorded pursuant to §63.752(d)(2) exceeds the limit(s) specified by the booth manufacturer or in locally prepared operating procedures, or the booth manufacturer's or locally prepared maintenance procedures for the filter or waterwash system have not been performed as scheduled, shut down the operation immediately and take corrective action. The operation shall not be resumed until the pressure drop or water flow rate is returned within the specified limit(s).

(4) The requirements of paragraphs (g)(1) through (g)(3) of this section do not apply to the following:

(i) Touch-up of scratched surfaces or damaged paint;

(ii) Hole daubing for fasteners;

(iii) Touch-up of trimmed edges;

(iv) Coating prior to joining dissimilar metal components;

(v) Stencil operations performed by brush or air brush;

(vi) Section joining;

(vii) Touch-up of bushings and other similar parts;

(viii) Sealant detackifying; and

(ix) Painting parts in an area identified in a title V permit, where the permitting authority has determined that it is not technically feasible to paint the parts in a booth.

**§63.746 Standards: Depainting operations.**

(a) *Applicability.* Each owner or operator of a new or existing depainting operation subject to this subpart shall comply with the requirements in paragraphs (a)(1) through (a)(3) of this section, and with the requirements specified in paragraph (b) where there are no controls for organic HAP, or paragraph (c) where organic HAP are controlled using a control system. This subpart does not apply to an aerospace manufacturing facility that depaints 6 or less completed aerospace vehicles in a calendar year.

(1) The provisions of this section apply to the depainting of the outer surface areas of completed aerospace vehicles, including the fuselage, wings, and vertical and horizontal stabilizers of the aircraft, and the outer casing and stabilizers of missiles and rockets. These provisions do not apply to the depainting of parts or units normally removed from the aerospace vehicle for depainting. However, depainting of wings and stabilizers is always subject to the requirements of this section regardless of whether their removal is considered by the owner or operator to be normal practice for depainting.

(2) Aerospace vehicles or components that are intended for public display, no longer operational, and not easily capable of being moved are exempt from the requirements of this section.

(3) The following depainting operations are exempt from the requirements of this section:

(i) Depainting of radomes; and

(ii) Depainting of parts, subassemblies, and assemblies normally removed from the primary aircraft structure before depainting.

(b)(1) *HAP emissions—non-HAP chemical strippers and technologies.* Except as

provided in paragraph (b)(3) of this section, each owner or operator of a new or existing aerospace depainting operation subject to this subpart shall emit no organic HAP from chemical stripping formulations and agents or chemical paint softeners.

(2) Where non-chemical based equipment is used to comply with paragraph (b)(1) of this section, either in total or in part, each owner or operator shall operate and maintain the equipment according to the manufacturer's specifications or locally prepared operating procedures. During periods of malfunctions of such equipment, each owner or operator may use substitute materials during the repair period provided the substitute materials used are those available that minimize organic HAP emissions. In no event shall substitute materials be used for more than 15 days annually, unless such materials are organic HAP-free.

(3) Each owner or operator of a new or existing depainting operation complying with paragraph (b)(1) shall not, on an annual average basis, use more than 26 gallons of organic HAP-containing chemical strippers per commercial aircraft depainted or more than 50 gallons of organic HAP-containing chemical strippers per military aircraft depainted for spot stripping and decal removal.

(4) Each owner or operator of a new or existing depainting operation complying with paragraph (b)(2), that generates airborne inorganic HAP emissions from dry media blasting equipment, shall also comply with the requirements specified in paragraphs (b)(4)(i) through (b)(4)(v) of this section.

(i) Perform the depainting operation in an enclosed area.

(ii) Pass any air stream removed from the enclosed area through a dry particulate filter system, baghouse, or waterwash system before exhausting it to the atmosphere.

(iii) If a dry particulate filter system is used, the following requirements shall be met:

(A) Maintain the system in good working order;

(B) Install a differential pressure gauge across the filter banks;

(C) Continuously monitor the pressure drop across the filter; and

(D) Take corrective action when the pressure drop exceeds or falls below the filter manufacturer's recommended limits.

(iv) If a waterwash system is used, continuously monitor the water flow rate.

(v) If the pressure drop, as recorded pursuant to § 63.752(e)(7), is outside the limit(s) specified by the filter manufacturer or in locally prepared operating procedures, whichever is more stringent, shut down the operation immediately and take corrective action. If the water path in the waterwash system fails the visual continuity/flow characteristics check as recorded pursuant to § 63.752(e)(7), or the water flow rate, as recorded pursuant to § 63.752(d)(2), exceeds the limit(s) specified by the booth manufacturer or in locally prepared operating procedures, or the booth manufacturer's or locally prepared maintenance procedures for the filter or waterwash system have not been performed as scheduled, shut down the operation immediately and take corrective action. The operation shall not be resumed until the pressure drop or water flow rate is returned within the specified limit(s).

(5) Mechanical and hand sanding operations are exempt from the requirements in paragraph (b)(4) of this section.

(c) *Organic HAP emissions—organic HAP-containing chemical strippers.* Each owner or operator of a new or existing organic HAP-containing chemical stripper depainting operation subject to this subpart shall comply with the requirements specified in this paragraph.

(1) All organic HAP emissions from the operation shall be reduced by the use of a control system. Each control system that was installed before the effective date shall reduce the operations' organic HAP emissions to the atmosphere by 81% or greater, taking into account capture and destruction or removal efficiencies, as determined using the procedures in § 63.750(g) when a carbon adsorber is used or § 63.750(h) when a control device other than a carbon adsorber is used. Each control system installed on or after the effective

date shall reduce organic HAP emissions to the atmosphere by 95% or greater. Reduction shall take into account capture and destruction or removal efficiencies, and the volume of chemical stripper used (e.g., the 95% efficiency may be achieved by controlling emissions at 81% efficiency with a control system and using 74% less stripper than in baseline applications). The baseline shall be calculated using data from 1996 and 1997, which shall be on a usage per aircraft or usage per square foot of surface basis.

(2) [Reserved]

**§ 63.747 Standards: Chemical milling maskant application operations.**

(a) Each owner or operator of a new or existing chemical milling maskant operation subject to this subpart shall comply with the requirements specified in paragraph (c) of this section for those chemical milling maskants that are uncontrolled (no control device is used to reduce organic HAP emissions from the operation) and in paragraph (d) of this section for those chemical milling maskants that are controlled (organic HAP emissions from the operation are reduced by the use of a control device).

(b) Each owner or operator shall conduct the handling and transfer of chemical milling maskants to or from containers, tanks, vats, vessels, and piping systems in such a manner that minimizes spills.

(c) *Uncontrolled maskants—organic HAP and VOC content levels.* Each owner or operator shall comply with the organic HAP and VOC content limits specified in paragraphs (c)(1) and (c)(2) of this section for each chemical milling maskant that is uncontrolled.

(1) Organic HAP emissions from chemical milling maskants shall be limited to an organic HAP content level of no more than 160 grams of organic HAP per liter (1.3 lb/gal) of chemical milling maskant (less water) as applied.

(2) VOC emissions from chemical milling maskants shall be limited to a VOC content level of no more than 160 grams of VOC per liter (1.3 lb/gal) of chemical milling maskant (less water and exempt solvents) as applied.

(3) The requirements of paragraphs (c)(1) and (c)(2) of this section do not apply to the following:

(i) Touch-up of scratched surfaces or damaged maskant; and

(ii) Touch-up of trimmed edges.

(d) *Controlled maskants—control system requirements.* Each control system shall reduce the operation's organic HAP and VOC emissions to the atmosphere by 81% or greater, taking into account capture and destruction or removal efficiencies, as determined using the procedures in § 63.750(g) when a carbon adsorber is used and in § 63.750(h) when a control device other than a carbon adsorber is used.

(e) *Compliance methods.* Compliance with the organic HAP and VOC content limits specified in paragraphs (c)(1) and (c)(2) of this section may be accomplished by using the methods specified in paragraphs (e)(1) and (e)(2) of this section either by themselves or in conjunction with one another.

(1) Use chemical milling maskants with HAP and VOC content levels equal to or less than the limits specified in paragraphs (c)(1) and (c)(2) of this section.

(2)(i) Use any combination of chemical milling maskants such that the monthly volume-weighted average organic HAP and VOC contents of the maskants comply with the specified content limits, unless the permitting agency specifies a shorter averaging period as part of an ambient ozone control program.

(ii) Averaging is allowed only for uncontrolled chemical milling maskants.

(iii) Each averaging scheme shall be approved in advance by the permitting agency and be adopted as part of the facility's title V permit.

**§ 63.748 Standards: Handling and storage of waste.**

Except as provided in § 63.741(e), the owner or operator of each facility subject to this subpart that produces a waste that contains HAP shall conduct the handling and transfer of the waste to or from containers, tanks, vats, vessels, and piping systems in such a manner that minimizes spills.

**§ 63.749 Compliance dates and determinations.**

(a) *Compliance dates.* Each owner or operator of an existing source subject to this subpart shall comply with the requirements of this subpart within 3 years after the effective date. Owners or operators of new sources subject to this subpart shall comply on the effective date or upon startup, whichever is later. In addition, each owner or operator shall comply with the compliance dates specified in § 63.6(b) and § 63.6(c).

(b) *General.* Each facility subject to this subpart shall be considered in non-compliance if the owner or operator fails to submit an operation and maintenance plan as required by § 63.743(b) or uses a control device other than one specified in this subpart that has not been approved by the Administrator, as required by § 63.743(c).

(c) *Cleaning operations.* Each cleaning operation subject to this subpart shall be considered in noncompliance if the owner or operator fails to institute and carry out the housekeeping measures required under § 63.744(a). Incidental emissions resulting from the activation of pressure release vents and valves on enclosed cleaning systems are exempt from this paragraph.

(1) *Hand-wipe cleaning.* An affected hand-wipe cleaning operation shall be considered in compliance when all hand-wipe cleaning solvents, excluding those used for hand cleaning of spray gun equipment under § 63.744(c)(3), meet either the composition requirements specified in § 63.744(b)(1) or the vapor pressure requirement specified in § 63.744(b)(2).

(2) *Spray gun cleaning.* An affected spray gun cleaning operation shall be considered in compliance when each of the following conditions is met:

(i) One of the four techniques specified in § 63.744 (c)(1) through (c)(4) is used;

(ii) The technique selected is operated according to the procedures specified in § 63.744 (c)(1) through (c)(4) as appropriate; and

(iii) If an enclosed system is used, monthly visual inspections are conducted and any leak detected is repaired within 15 days after detection. If the leak is not repaired by the 15th day after detection, the solvent shall be re-

moved and the enclosed cleaner shall be shut down until the cleaner is repaired or its use is permanently discontinued.

(3) *Flush cleaning.* An affected flush cleaning operation shall be considered in compliance if the operating requirements specified in § 63.744(d) are implemented and carried out.

(d) *Organic HAP and VOC content levels—primer and topcoat application operations—(1) Performance test periods.* For uncontrolled coatings that are not averaged, each 24 hours is considered a performance test. For compliant and non-compliant coatings that are averaged together, each 30-day period is considered a performance test, unless the permitting agency specifies a shorter averaging period as part of an ambient ozone control program. When using a control device other than a carbon adsorber, three 1-hour runs constitute the test period for the initial and any subsequent performance test. When using a carbon adsorber, each rolling material balance period is considered a performance test.

(2) *Initial performance tests.* If a control device is used, each owner or operator shall conduct an initial performance test to demonstrate compliance with the overall reduction efficiency specified in paragraph § 63.745, unless a waiver is obtained under either § 63.7(e)(2)(iv) or § 63.7(h). The initial performance test shall be conducted according to the procedures and test methods specified in § 63.7 and § 63.750(g) for carbon adsorbers and in § 63.750(h) for control devices other than carbon adsorbers. For carbon adsorbers, the initial performance test shall be used to establish the appropriate rolling material balance period for determining compliance. The procedures in paragraphs (d)(2)(i) through (d)(2)(vi) of this section shall be used in determining initial compliance with the provisions of this subpart for carbon adsorbers.

(i)(A) When either EPA Method 18 or EPA Method 25A is to be used in the determination of the efficiency of a fixed-bed carbon adsorption system with a common exhaust stack for all the individual carbon adsorber vessels pursuant to § 63.750(g) (2) or (4), the test shall consist of three separate runs,

each coinciding with one or more complete sequences through the adsorption cycles of all of the individual carbon adsorber vessels.

(B) When either EPA Method 18 or EPA Method 25A is to be used in the determination of the efficiency of a fixed-bed carbon adsorption system with individual exhaust stacks for each carbon adsorber vessel pursuant to § 63.750(g) (3) or (4), each carbon adsorber vessel shall be tested individually. The test for each carbon adsorber vessel shall consist of three separate runs. Each run shall coincide with one or more complete adsorption cycles.

(ii) EPA Method 1 or 1A of appendix A of part 60 is used for sample and velocity traverses.

(iii) EPA Method 2, 2A, 2C, or 2D of appendix A of part 60 is used for velocity and volumetric flow rates.

(iv) EPA Method 3 of appendix A of part 60 is used for gas analysis.

(v) EPA Method 4 of appendix A of part 60 is used for stack gas moisture.

(vi) EPA Methods 2, 2A, 2C, 2D, 3, and 4 shall be performed, as applicable, at least twice during each test period.

(3) The primer application operation is considered in compliance when the conditions specified in paragraphs (d)(3)(i) through (d)(3)(iv) of this section, as applicable, and in paragraph (e) of this section are met. Failure to meet any one of the conditions identified in these paragraphs shall constitute non-compliance.

(i) For all uncontrolled primers, all values of  $H_i$  and  $H_a$  (as determined using the procedures specified in § 63.750 (c) and (d)) are less than or equal to 350 grams of organic HAP per liter (2.9 lb/gal) of primer (less water) as applied, and all values of  $G_i$  and  $G_a$  (as determined using the procedures specified in § 63.750 (e) and (f)) are less than or equal to 350 grams of organic VOC per liter (2.9 lb/gal) of primer (less water and exempt solvents) as applied.

(ii) If a control device is used:

(A) The overall control system efficiency,  $E_k$ , as determined using the procedures specified in § 63.750(g) for control systems containing carbon adsorbers and in § 63.750(h) for control systems with other control devices, is equal to or greater than 81% during the

initial performance test and any subsequent performance test;

(B) If an incinerator other than a catalytic incinerator is used, the average combustion temperature for all 3-hour periods is greater than or equal to the average combustion temperature established under § 63.751(b)(11); and

(C) If a catalytic incinerator is used, the average combustion temperatures for all 3-hour periods are greater than or equal to the average combustion temperatures established under § 63.751(b)(12).

(iii)(A) Uses an application technique specified in § 63.745 (f)(1)(i) through (f)(1)(viii), or

(B) Uses an alternative application technique, as allowed under § 63.745(f)(1)(ix), such that the emissions of both organic HAP and VOC for the implementation period of the alternative application method are less than or equal to the emissions generated during the initial 30-day period, the period of time required to apply primer to five completely assembled aircraft, or a time period approved by the permitting agency, using HVLP or electrostatic spray application methods as determined using the procedures specified in § 63.750(i).

(iv) Operates all application techniques in accordance with the manufacturer's specifications or locally prepared operating procedures, whichever is more stringent.

(4) The topcoat application operation is considered in compliance when the conditions specified in paragraphs (e)(4)(i) through (e)(4)(iv) of this section, as applicable, and in paragraph (f) of this section are met. Failure to meet any of the conditions identified in these paragraphs shall constitute non-compliance.

(i) For all uncontrolled topcoats, all values of  $H_i$  and  $H_a$  (as determined using the procedures specified in § 63.750(c) and (d)) are less than or equal to 420 grams organic HAP per liter (3.5 lb/gal) of topcoat (less water) as applied, and all values of  $G_i$  and  $G_a$  (as determined using the procedures specified in § 63.750(e) and (f)) are less than or equal to 420 grams organic VOC per liter (3.5 lb/gal) of topcoat (less water and exempt solvents) as applied.

(ii) If a control device is used,

(A) The overall control system efficiency,  $E_k$ , as determined using the procedures specified in § 63.750(g) for control systems containing carbon adsorbers and in § 63.750(h) for control systems with other control devices, is equal to or greater than 81% during the initial performance test and any subsequent performance test;

(B) If an incinerator other than a catalytic incinerator is used, the average combustion temperature for all 3-hour periods is greater than or equal to the average combustion temperature established under § 63.751(b)(11); and

(C) If a catalytic incinerator is used, the average combustion temperatures for all 3-hour periods are greater than or equal to the average combustion temperatures established under § 63.751(b)(12).

(iii)(A) Uses an application technique specified in § 63.745(f)(1)(i) through (f)(1)(ix) or

(B) Uses an alternative application technique as allowed under § 63.745(f)(1)(ix) such that the emissions of both organic HAP and VOC for the implementation period of the alternative application method are less than or equal to the emissions generated during the initial 30-day period, the period of time required to apply topcoat to five completely assembled aircraft, or a time period approved by the permitting agency, using HVLP or electrostatic spray application methods as determined using the procedures specified in § 63.750(i).

(iv) Operates all application techniques in accordance with the manufacturer's specifications or locally prepared operating procedures.

(e) *Inorganic HAP emissions—primer and topcoat application operations.* For each primer or topcoat application operation that emits inorganic HAP, the operation is in compliance when:

(1) It is operated according to the requirements specified in § 63.745(g)(1) through (g)(3); and

(2) It is shut down immediately whenever the pressure drop or water flow rate is outside the limit(s) established for them and is not restarted until the pressure drop or water flow rate is returned within these limit(s), as required under § 63.745(g)(3).

(f) *Organic HAP emissions—Depainting operations—(1) Performance test periods.* When using a control device other than a carbon adsorber, three 1-hour runs constitute the test period for the initial and any subsequent performance test. When a carbon adsorber is used, each rolling material balance period is considered a performance test. Each 24-hour period is considered a performance test period for determining compliance with § 63.746(b)(1). For uncontrolled organic emissions from depainting operations, each calendar year is considered a performance test period for determining compliance with the HAP limits for organic HAP-containing chemical strippers used for spot stripping and decal removal.

(2) *Initial performance tests.* If a control device is used, each owner or operator shall conduct an initial performance test to demonstrate compliance with the overall reduction efficiency specified in § 63.746(c), unless a waiver is obtained under either § 63.7(e)(2)(iv) or § 63.7(h). The initial performance test shall be conducted according to the procedures and test methods specified in § 63.7 and § 63.750(g) for carbon adsorbers and in § 63.750(h) for control devices other than carbon adsorbers. For carbon adsorbers, the initial performance test shall be used to establish the appropriate rolling material balance period for determining compliance. The procedures in paragraphs (2)(i) through (2)(vi) of this section shall be used in determining initial compliance with the provisions of this subpart for carbon adsorbers.

(i)(A) When either EPA Method 18 or EPA Method 25A is to be used in the determination of the efficiency of a fixed-bed carbon adsorption system with a common exhaust stack for all the individual carbon adsorber vessels pursuant to § 63.750(g)(2) or (4), the test shall consist of three separate runs, each coinciding with one or more complete sequences through the adsorption cycles of all of the individual carbon adsorber vessels.

(B) When either EPA Method 18 or EPA Method 25A is to be used in the determination of the efficiency of a fixed-bed carbon adsorption system with individual exhaust stacks for each carbon adsorber vessel pursuant to

§ 63.750(g) (3) or (4), each carbon adsorber vessel shall be tested individually. The test for each carbon adsorber vessel shall consist of three separate runs. Each run shall coincide with one or more complete adsorption cycles.

(ii) EPA Method 1 or 1A of appendix A of part 60 is used for sample and velocity traverses.

(iii) EPA Method 2, 2A, 2C, or 2D of appendix A of part 60 is used for velocity and volumetric flow rates.

(iv) EPA Method 3 of appendix A of part 60 is used for gas analysis.

(v) EPA Method 4 of appendix A of part 60 is used for stack gas moisture.

(vi) EPA Methods 2, 2A, 2C, 2D, 3, and 4 shall be performed, as applicable, at least twice during each test period.

(3) An organic HAP-containing chemical stripper depainting operation is considered in compliance when the conditions specified in paragraph (g)(3)(i) of this section are met.

(i) If a carbon adsorber (or other control device) is used, the overall control efficiency of the control system, as determined using the procedures specified in § 63.750(g) (or other control device as determined using the procedures specified in § 63.750(h)), is equal to or greater than 81% for control systems installed before the effective date, or equal to or greater than 95% for control systems installed on or after the effective date, during the initial performance test and all subsequent material balances (or performance tests, as appropriate).

(ii) For non-HAP depainting operations complying with § 63.746(b)(1);

(A) For any spot stripping and decal removal, the value of C, as determined using the procedures specified in § 63.750(j), is less than or equal to 26 gallons of organic HAP-containing chemical stripper per aircraft depainted for commercial aircraft and is less than or equal to 50 gallons of organic HAP-containing chemical stripper per aircraft depainted for military aircraft calculated on a yearly average; and

(B) The requirements of § 63.746(b)(2) are carried out during malfunctions of non-chemical based equipment.

(g) *Inorganic HAP emissions—depainting operations.* Each depainting operation is in compliance when:

(1) The operating requirements specified in § 63.746(b)(4) are followed; and

(2) It is shut down immediately whenever the pressure drop or water flow rate is outside the limit(s) established for them and is not restarted until the pressure drop or water flow rate is returned within these limit(s), as required under § 63.746(b)(4)(v).

(h) *Chemical milling maskant application operations—(1) Performance test periods.* For uncontrolled chemical milling maskants that are not averaged, each 24-hour period is considered a performance test. For compliant and non-compliant chemical milling maskants that are averaged together, each 30-day period is considered a performance test, unless the permitting agency specifies a shorter period as part of an ambient ozone control program. When using a control device other than a carbon adsorber, three 1-hour runs constitute the test period for the initial and any subsequent performance test. When a carbon adsorber is used, each rolling material balance period is considered a performance test.

(2) *Initial performance tests.* If a control device is used, each owner or operator shall conduct an initial performance test to demonstrate compliance with the overall reduction efficiency specified in § 63.747(d), unless a waiver is obtained under either § 63.7(e)(2)(iv) or § 63.7(h). The initial performance test shall be conducted according to the procedures and test methods specified in § 63.7 and § 63.750(g) for carbon adsorbers and in § 63.750(h) for control devices other than carbon adsorbers. For carbon adsorbers, the initial performance test shall be used to establish the appropriate rolling material balance period for determining compliance. The procedures in paragraphs (h)(2) (i) through (vi) of this section shall be used in determining initial compliance with the provisions of this subpart for carbon adsorbers.

(i)(A) When either EPA Method 18 or EPA Method 25A is to be used in the determination of the efficiency of a fixed-bed carbon adsorption system with a common exhaust stack for all the individual carbon adsorber vessels

pursuant to § 63.750(g) (2) or (4), the test shall consist of three separate runs, each coinciding with one or more complete sequences through the adsorption cycles of all of the individual carbon adsorber vessels.

(B) When either EPA Method 18 or EPA Method 25A is to be used in the determination of the efficiency of a fixed-bed carbon adsorption system with individual exhaust stacks for each carbon adsorber vessel pursuant to § 63.750(g) (3) or (4), each carbon adsorber vessel shall be tested individually. The test for each carbon adsorber vessel shall consist of three separate runs. Each run shall coincide with one or more complete adsorption cycles.

(ii) EPA Method 1 or 1A of appendix A of part 60 is used for sample and velocity traverses.

(iii) EPA Method 2, 2A, 2C, or 2D of appendix A of part 60 is used for velocity and volumetric flow rates.

(iv) EPA Method 3 of appendix A of part 60 is used for gas analysis.

(v) EPA Method 4 of appendix A of part 60 is used for stack gas moisture.

(vi) EPA Methods 2, 2A, 2C, 2D, 3, and 4 shall be performed, as applicable, at least twice during each test period.

(3) The chemical milling maskant application operation is considered in compliance when the conditions specified in paragraphs (i)(3)(i) and (i)(3)(ii) of this section are met.

(i) For all uncontrolled chemical milling maskants, all values of  $H_i$  and  $H_a$  (as determined using the procedures specified in § 63.750 (k) and (l)) are less than or equal to 160 grams of organic HAP per liter (1.3 lb/gal) as applied (less water) and all values of  $G_i$  and  $G_a$  (as determined using the procedures specified in § 63.750 (m) and (n)) are less than or equal to 160 grams of VOC per liter (1.3 lb/gal) of chemical milling maskant (less water and exempt solvents) as applied.

(ii) If a carbon adsorber (or other control device) is used, the overall control efficiency of the control system, as determined using the procedures specified in § 63.750(g) (or systems with other control devices as determined using the procedures specified in § 63.750(h)), is equal to or greater than 81% during the initial performance test period and all

subsequent material balances (or performance tests, as appropriate).

(i) *Handling and storage of waste.* For those wastes subject to this subpart, failure to comply with the requirements specified in § 63.748 shall be considered a violation.

#### § 63.750 Test methods and procedures.

(a) *Composition determination.* Compliance with the hand-wipe cleaning solvent approved composition list specified in § 63.744(b)(1) for hand-wipe cleaning solvents shall be demonstrated using data supplied by the manufacturer of the cleaning solvent. The data shall identify all components of the cleaning solvent and shall demonstrate that one of the approved composition definitions is met.

(b) *Vapor pressure determination.* The composite vapor pressure of hand-wipe cleaning solvents used in a cleaning operation subject to this subpart shall be determined as follows:

(1) For single-component hand-wipe cleaning solvents, the vapor pressure shall be determined using MSDS or other manufacturer's data, standard engineering reference texts, or other equivalent methods.

(2) The composite vapor pressure of a blended hand-wipe solvent shall be determined by quantifying the amount of each organic compound in the blend using manufacturer's supplied data or a gas chromatographic analysis in accordance with ASTM E 260-91 (incorporated by reference as specified in § 63.14 of subpart A of this part) and by calculating the composite vapor pressure of the solvent by summing the partial pressures of each component. The vapor pressure of each component shall be determined using manufacturer's data, standard engineering reference texts, or other equivalent methods. The following equation shall be used to determine the composite vapor pressure:

$$PP_c = \sum_{i=1}^n \frac{(W_i)(VP_i) / MW_i}{\frac{W_w}{MW_w} + \frac{W_e}{MW_e} + \sum_{i=1}^n \frac{W_i}{MW_i}}$$

where:

$W_i$  = Weight of the "i"th VOC compound, grams.

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$W_w$ =Weight of water, grams.

$W_e$ =Weight of non-HAP, nonVOC compound, grams.

$MW_i$ =Molecular weight of the "i"th VOC compound, g/g-mole.

$MW_w$ =Molecular weight of water, g/g-mole.

$MW_e$ =Molecular weight of exempt compound, g/g-mole.

$PP_c$ =VOC composite partial pressure at 20 °C, mm Hg.

$VP_i$ =Vapor pressure of the "i"th VOC compound at 20 °C, mm Hg.

(c) *Organic HAP content level determination—compliant primers and topcoats.* For those uncontrolled primers and topcoats complying with the primer and topcoat organic HAP content limits specified in §63.745(c) without being averaged, the following procedures shall be used to determine the mass of organic HAP emitted per volume of coating (less water) as applied.

(1) For coatings that contain no exempt solvents, determine the total organic HAP content using manufacturer's supplied data or Method 24 of 40 CFR part 60, appendix A to determine the VOC content. The VOC content shall be used as a surrogate for total HAP content for coatings that contain no exempt solvent. If there is a discrepancy between the manufacturer's formulation data and the results of the Method 24 analysis, compliance shall be based on the results from the Method 24 analysis.

When Method 24 is used to determine the VOC content of water-reducible coatings, the precision adjustment factors in Reference Method 24 shall be used. If the adjusted analytical VOC content is less than the formulation solvent content, then the analytical VOC content should be set equal to the formulation solvent content.

(2) For each coating formulation as applied, determine the organic HAP weight fraction, water weight fraction (if applicable), and density from manufacturer's data. If these values cannot be determined using the manufacturer's data, the owner or operator shall submit an alternative procedure for determining their values for approval by the Administrator. Recalculation is required only when a change occurs in the coating formulation.

(3) For each coating as applied, calculate the mass of organic HAP emitted per volume of coating (lb/gal) less water as applied using equations 1, 2, and 3:

$$V_{wi} = \frac{D_{ci} W_{wi}}{D_w} \quad \text{Eq. 1}$$

where

$V_{wi}$ =volume (gal) of water in one gal of coating i.

$D_{ci}$ =density (lb of coating per gal of coating) of coating i.

$W_{wi}$ =weight fraction (expressed as a decimal) of water in coating i.

$D_w$ =density of water, 8.33 lb/gal.

$$M_{Hi} = D_{ci} W_{Hi} \quad \text{Eq. 2}$$

where

$M_{Hi}$ =mass (lb) of organic HAP in one gal of coating i.

$D_{ci}$ =density (lb of coating per gal of coating) of coating i.

$W_{Hi}$ =weight fraction (expressed as a decimal) of organic HAP in coating i.

$$H_i = \frac{M_{Hi}}{(1 - V_{wi})} \quad \text{Eq. 3}$$

where

$H_i$ =mass of organic HAP emitted per volume of coating i (lb/gal) less water as applied.

$M_{Hi}$ =mass (lb) of organic HAP in one gal of coating i.

$V_{wi}$ =volume (gal) of water in one gal of coating i.

(d) *Organic HAP content level determination—averaged primers and topcoats.* For those uncontrolled primers and topcoats that are averaged together in order to comply with the primer and topcoat organic HAP content limits specified in §63.745(c), the following procedure shall be used to determine the monthly volume-weighted average mass of organic HAP emitted per volume of coating (less water) as applied, unless the permitting agency specifies a shorter averaging period as part of an ambient ozone control program.

(1)(i) Determine the total organic HAP weight fraction as applied of each coating. If any ingredients, including diluent solvent, are added to a coating prior to its application, the organic

HAP weight fraction of the coating shall be determined at a time and location in the process after all ingredients have been added.

(ii) Determine the total organic HAP weight fraction of each coating as applied each month.

(A) If no changes have been made to a coating, either as supplied or as applied, or if a change has been made that has a minimal effect on the organic HAP content of the coating, the value previously determined may continue to be used until a change in formulation has been made by either the manufacturer or the user.

(B) If a change in formulation or a change in the ingredients added to the coating takes place, including the ratio of coating to diluent solvent, prior to its application, either of which results in a more than minimal effect on the organic HAP content of the coating, the total organic HAP weight fraction of the coating shall be redetermined.

(iii) Manufacturer's formulation data may be used to determine the total organic HAP content of each coating and any ingredients added to the coating prior to its application. If the total organic HAP content cannot be determined using the manufacturer's data, the owner or operator shall submit an alternative procedure for determining the total organic HAP weight fraction for approval by the Administrator.

(2)(i) Determine the volume both in total gallons as applied and in total gallons (less water) as applied of each coating. If any ingredients, including diluent solvents, are added prior to its application, the volume of each coating shall be determined at a time and location in the process after all ingredients (including any diluent solvent) have been added.

(ii) Determine the volume of each coating (less water) as applied each month, unless the permitting agency specifies a shorter period as part of an ambient ozone control program.

(iii) The volume applied may be determined from company records.

(3)(i) Determine the density of each coating as applied. If any ingredients, including diluent solvent, are added to a coating prior to its application, the density of the coating shall be determined at a time and location in the

process after all ingredients have been added.

(ii) Determine the density of each coating as applied each month, unless the permitting agency specifies a shorter period as part of an ambient ozone control program.

(A) If no changes have been made to a coating, either as supplied or as applied, or if a change has been made that has a minimal effect on the density of the coating, then the value previously determined may continue to be used until a change in formulation has been made by either the manufacturer or the user.

(B) If a change in formulation or a change in the ingredients added to the coating takes place, including the ratio of coating to diluent solvent, prior to its application, either of which results in a more than minimal effect on the density of the coating, then the density of the coating shall be redetermined.

(iii) The density may be determined from company records, including manufacturer's data sheets. If the density of the coating cannot be determined using the company's records, including the manufacturer's data, then the owner or operator shall submit an alternative procedure for determining the density for approval by the Administrator.

(4) Calculate the total volume in gallons as applied (less water) by summing the individual volumes of each coating (less water) as applied, which were determined under paragraph (d)(2) of this section.

(5) Calculate the volume-weighted average mass of organic HAP in coatings emitted per unit volume (lb/gal) of coating (less water) as applied during each 30-day period using equation 4:

$$H_a = \frac{\sum_{i=1}^n W_{Hi} D_{ci} V_{ci}}{C_{lw}} \quad \text{Eq. 4}$$

where

$H_a$ =volume-weighted average mass of organic HAP emitted per unit volume of coating (lb/gal) (less water) as applied during each 30-day period for those coatings being averaged.

$n$ =number of coatings being averaged.

$W_{Hi}$ =weight fraction (expressed as a decimal) of organic HAP in coating i as applied that is being averaged during each 30-day period.

$D_{ci}$ =density (lb of coating per gal of coating) of coating i as applied that is being averaged during each 30-day period.

$V_{ci}$ =volume (gal) of coating i as applied that is being averaged during the 30-day period.

$C_{iw}$ =total volume (gal) of all coatings (less water) as applied that are being averaged during each 30-day period.

(e) *VOC content level determination—compliant primers and topcoats.* For those uncontrolled primers and topcoats complying with the primer and topcoat VOC content levels specified in § 63.745(c) without being averaged, the following procedure shall be used to determine the mass of VOC emitted per volume of coating (less water and exempt solvents) as applied.

(1) Determine the VOC content of each formulation (less water and exempt solvents) as applied using manufacturer's supplied data or Method 24 of 40 CFR part 60, appendix A to determine the VOC content. The VOC content shall be used as a surrogate for total HAP content for coatings that contain no exempt solvent. If there is a discrepancy between the manufacturer's formulation data and the results of the Method 24 analysis, compliance shall be based on the results from the Method 24 analysis.

When Method 24 is used to determine the VOC content of water-reducible coatings, the precision adjustment factors in Reference Method 24 shall be used. If the adjusted analytical VOC content is less than the formulation solvent content, then the analytical VOC content should be set equal to the formulation solvent content.

(2) For each coating applied, calculate the mass of VOC emitted per volume of coating (lb/gal) (less water and exempt solvents) as applied using equations 5, 6, and 7:

$$V_{wi} = \frac{D_{ci} W_{wi}}{D_w} \quad \text{Eq. 5}$$

where

$V_{wi}$ =volume (gal) of water in one gal of coating i.

$D_{ci}$ =density (lb of coating per gal of coating) of coating i.

$W_{wi}$ =weight fraction (expressed as a decimal) of water in coating i.

$D_w$ =density of water, 8.33 lb/gal.

$$M_{Vi} = D_{ci} W_{Vi} \quad \text{Eq. 6}$$

where

$M_{Vi}$ =mass (lb) of VOC in one gal of coating i.

$D_{ci}$ =density (lb of coating per gal of coating) of coating i.

$W_{Vi}$ =weight fraction (expressed as a decimal) of VOC in coating i.

$$G_i = \frac{M_{Vi}}{(1 - V_{wi})} \quad \text{Eq. 7}$$

where

$G_i$ =mass of VOC emitted per volume of coating i (lb/gal) (less water and exempt solvents) as applied.

$M_{Vi}$ =mass (lb) of VOC in one gal of coating i.

$V_{wi}$ =volume (gal) of water in one gal of coating i.

$V_{Xi}$ =volume (gal) of exempt solvents in one gal of coating i.

(3)(i) If the VOC content is found to be different when EPA Method 24 is used during an enforcement inspection from that used by the owner or operator in calculating  $G_a$ , compliance shall be based, except as provided in paragraph (e)(3)(ii) of this section, upon the VOC content obtained using EPA Method 24.

(ii) If the VOC content of a coating obtained using Method 24 would indicate noncompliance as determined under either § 63.749 (d)(3)(i) or (d)(4)(i), an owner or operator may elect to average the coating with other uncontrolled coatings and (re)calculate  $G_i$  (using the procedure specified in paragraph (f) of this section), provided appropriate and sufficient records were maintained for all coatings included in the average (re)calculation. The (re)calculated value of  $G_i$  ( $G_a$  in paragraph (f)) for the averaged coatings shall then be used to determine compliance.

(f) *VOC content level determination—averaged primers and topcoats.* For those uncontrolled primers and topcoats that

are averaged within their respective coating category in order to comply with the primer and topcoat VOC content limits specified in §63.745 (c)(2) and (c)(4), the following procedure shall be used to determine the monthly volume-weighted average mass of VOC emitted per volume of coating (less water and exempt solvents) as applied, unless the permitting agency specifies a shorter averaging period as part of an ambient ozone control program.

(1)(i) Determine the VOC content (lb/gal) as applied of each coating. If any ingredients, including diluent solvent, are added to a coating prior to its application, the VOC content of the coating shall be determined at a time and location in the process after all ingredients have been added.

(ii) Determine the VOC content of each coating as applied each month, unless the permitting agency specifies a shorter period as part of an ambient ozone control program.

(A) If no changes have been made to a coating, either as supplied or as applied, or if a change has been made that has a minimal effect on the VOC content of the coating, the value previously determined may continue to be used until a change in formulation has been made by either the manufacturer or the user.

(B) If a change in formulation or a change in the ingredients added to the coating takes place, including the ratio of coating to diluent solvent, prior to its application, either of which results in a more than minimal effect on the VOC content of the coating, the VOC content of the coating shall be redetermined.

(iii) Determine the VOC content of each primer and topcoat formulation (less water and exempt solvents) as applied using EPA Method 24 or from manufacturer's data.

(2)(i) Determine the volume both in total gallons as applied and in total gallons (less water and exempt solvents) as applied of each coating. If any ingredients, including diluent solvents, are added prior to its application, the volume of each coating shall be determined at a time and location in the process after all ingredients (including any diluent solvent) have been added.

(ii) Determine the volume of each coating (less water and exempt solvents) as applied each day.

(iii) The volume applied may be determined from company records.

(3) Calculate the total volume in gallons (less water and exempt solvents) as applied by summing the individual volumes of each coating (less water and exempt solvents) as applied, which were determined under paragraph (f)(2) of this section.

(4) Calculate the volume-weighted average mass of VOC emitted per unit volume (lb/gal) of coating (less water and exempt solvents) as applied for each coating category during each 30-day period using equation 8:

$$G_a = \frac{\sum_{i=1}^n (\text{VOC})_{ci} V_{ci}}{C_{l\text{wes}}} \quad \text{Eq. 8}$$

where

$G_a$ =volume weighted average mass of VOC per unit volume of coating (lb/gal) (less water and exempt solvents) as applied during each 30-day period for those coatings being averaged.

$n$ =number of coatings being averaged.

$(\text{VOC})_{ci}$ =VOC content (lb/gal) of coating  $i$  (less water and exempt solvents) as applied (as determined using the procedures specified in paragraph (f)(1) of this section) that is being averaged during the 30-day period.

$V_{ci}$ =volume (gal) of coating  $i$  (less water and exempt solvents) as applied that is being averaged during the 30-day period.

$C_{l\text{wes}}$ =total volume (gal) of all coatings (less water and exempt solvents) as applied during each 30-day period for those coatings being averaged.

(5)(i) If the VOC content is found to be different when EPA Method 24 is used during an enforcement inspection from that used by the owner or operator in calculating  $G_a$ , recalculation of  $G_a$  is required using the new value. If more than one coating is involved, the recalculation shall be made once using all of the new values.

(ii) If recalculation is required, an owner or operator may elect to include in the recalculation of  $G_a$  uncontrolled

coatings that were not previously included provided appropriate and sufficient records were maintained for these other coatings to allow daily recalculations.

(iii) The recalculated value of  $G_a$  under either paragraph (f)(5)(i) or (f)(5)(ii) of this section shall be used to determine compliance.

(g) *Overall VOC and/or organic HAP control efficiency—carbon adsorber.* Each owner or operator subject to the requirements of §63.745(d), §63.746(c), or §63.747(d) shall demonstrate initial compliance with the requirements of this subpart by following the procedures of paragraph (g)(1), (2), (3), (4), or (5) as applicable and paragraphs (6), (7), and (8) of this section. When an initial compliance demonstration is required by this subpart, the procedures in paragraphs (g)(9) through (g)(14) of this section shall be used in determining initial compliance with the provisions of this subpart.

(1) To demonstrate initial and continuous compliance with §63.745(d), §63.746(c), or §63.747(d) when emissions are controlled by a dedicated solvent recovery device, each owner or operator of the affected operation may perform a liquid-liquid HAP or VOC material balance over rolling 7- to 30-day periods in lieu of demonstrating compliance through the methods in paragraph (g)(2), (g)(3), or (g)(4) of this section. Results of the material balance calculations performed to demonstrate initial compliance shall be submitted to the Administrator with the notification of compliance status required by §63.9(h) and by §63.753 (c)(1)(iv), (d)(3)(i), and (e)(3). When demonstrating compliance by this procedure, §63.7(e)(3) of subpart A does not apply. The amount of liquid HAP or VOC applied and recovered shall be determined as discussed in paragraph (g)(1)(iii) of this section. The overall HAP or VOC emission reduction (R) is calculated using equation 9:

$$R = \frac{M_r}{\sum_{i=1}^n [W_{oi} M_{ci} - RS_i]} \times 100 \quad \text{Eq. 9}$$

(i) The value of  $RS_i$  is zero unless the owner or operator submits the follow-

ing information to the Administrator for approval of a measured  $RS_i$  value that is greater than zero:

(A) Measurement techniques; and

(B) Documentation that the measured value of  $RS_i$  exceeds zero.

(ii) The measurement techniques of paragraph (g)(1)(i)(A) of this section shall be submitted to the Administrator for approval with the notification of performance test required under §63.7(b).

(iii) Each owner or operator demonstrating compliance by the test method described in paragraph (g)(1) of this section shall:

(A) Measure the amount of coating or stripper as applied;

(B) Determine the VOC or HAP content of all coating and stripper applied using the test method specified in §63.750(c) (1) through (3) or (e) (1) and (2) of this section;

(C) Install, calibrate, maintain, and operate, according to the manufacturer's specifications, a device that indicates the amount of HAP or VOC recovered by the solvent recovery device over rolling 7- to 30-day periods; the device shall be certified by the manufacturer to be accurate to within  $\pm 2.0$  percent, and this certification shall be kept on record;

(D) Measure the amount of HAP or VOC recovered; and

(E) Calculate the overall HAP or VOC emission reduction (R) for rolling 7- to 30-day periods using equation 9.

(F) Compliance is demonstrated if the value of R is equal to or greater than the overall HAP control efficiencies required by §63.745(d), §63.746(c), or §63.747(d).

(2) To demonstrate initial compliance with §63.745(d), §63.746(c), or §63.747(d) when affected HAP emission points are controlled by an emission control device other than a fixed-bed carbon adsorption system with individual exhaust stacks for each carbon adsorber vessel, each owner or operator of an affected source shall perform a gaseous emission test using the following procedures.

(i) Construct the overall HAP emission reduction system so that all volumetric flow rates and total HAP or VOC emissions can be accurately determined by the applicable test methods

and procedures specified in § 63.750(g) (9) through (14).

(ii) Determine capture efficiency from the HAP emission points by capturing, venting, and measuring all HAP emissions from the HAP emission points. During a performance test, the owner or operator of affected HAP emission points located in an area with other gaseous emission sources not affected by this subpart shall isolate the affected HAP emission points from all other gaseous emission points by one of the following methods:

(A) Build a temporary total enclosure around the affected HAP emission point(s); or

(B) Shut down all gaseous emission points not affected by this subpart and continue to exhaust fugitive emissions from the affected HAP emission points through any building ventilation system and other room exhausts such as drying ovens. All ventilation air must be vented through stacks suitable for testing.

(iii) Operate the emission control device with all affected HAP emission points connected and operating.

(iv) Determine the efficiency (E) of the control device using equation 10:

(v) Determine the efficiency (F) of the capture system using equation 11:

$$E = \frac{\sum_{i=1}^n Q_{bi} C_{bi} - \sum_{j=1}^p Q_{aj} C_{aj}}{\sum_{i=1}^n Q_{bi} C_{bi}} \quad \text{Eq. 10}$$

$$F = \frac{\sum_{i=1}^n Q_{di} C_{di}}{\sum_{i=1}^n Q_{di} C_{di} + \sum_{k=1}^p Q_{fk} C_{fk}} \quad \text{Eq. 11}$$

(vi) For each HAP emission point subject to § 63.745(d), § 63.746(c), or § 63.747(d), compliance is demonstrated if the product of (E) × (F) is equal to or greater than the overall HAP control efficiencies required under § 63.745(d), § 63.746(c), or § 63.747(d).

(3) To demonstrate compliance with § 63.745(d), § 63.746(c), or § 63.747(d) when affected HAP emission points are controlled by a fixed-bed carbon adsorption system with individual exhaust stacks for each carbon adsorber vessel, each owner or operator of an affected source shall perform a gaseous emission test using the following procedures:

(i) Construct the overall HAP emission reduction system so that each volumetric flow rate and the total HAP emissions can be accurately determined by the applicable test methods and procedures specified in § 63.750(g) (9) through (14);

(ii) Assure that all HAP emissions from the affected HAP emission point(s) are segregated from gaseous emission points not affected by this subpart and that the emissions can be captured for measurement, as described in § 63.705(g)(2)(ii) (A) and (B);

(iii) Operate the emission control device with all affected HAP emission points connected and operating;

(iv) Determine the efficiency ( $H_v$ ) of each individual carbon adsorber vessel (v) using equation 12:

$$H_v = \frac{Q_{gv} C_{gv} - Q_{hv} C_{hv}}{Q_{gv} C_{gv}} \quad \text{Eq. 12}$$

(v) Determine the efficiency of the carbon adsorption system ( $H_{sys}$ ) by computing the average efficiency of the individual carbon adsorber vessels as weighted by the volumetric flow rate ( $Q_{hv}$ ) of each individual carbon adsorber vessel (v) using equation 13:

$$H_{sys} = \frac{\sum_{v=1}^q H_v Q_{hv}}{\sum_{v=1}^q Q_{hv}} \quad \text{Eq. 13}$$

(vi) Determine the efficiency (F) of the capture system using equation 11.

(vii) For each HAP emission point subject to § 63.745(d), § 63.746(c), or § 63.747(d), compliance is demonstrated if the product of ( $H_{sys}$ ) × (F) is equal to or greater than the overall HAP control efficiency required by § 63.745(d), § 63.746(c), or § 63.747(d).

(4) An alternative method of demonstrating compliance with §63.745(d), §63.746(c), or §63.747(d) is the installation of a total enclosure around the affected HAP emission point(s) and the ventilation of all HAP emissions from the total enclosure to a control device with the efficiency specified in paragraph (g)(4)(iii) of this section. If this method is selected, the compliance test methods described in paragraphs (g)(1), (g)(2), and (g)(3) of this section are not required. Instead, each owner or operator of an affected source shall:

(i) Demonstrate that a total enclosure is installed. An enclosure that meets the requirements in paragraphs (g)(4)(i) (A) through (D) of this section shall be considered a total enclosure. The owner or operator of an enclosure that does not meet these requirements may apply to the Administrator for approval of the enclosure as a total enclosure on a case-by-case basis. The enclosure shall be considered a total enclosure if it is demonstrated to the satisfaction of the Administrator that all HAP emissions from the affected HAP emission point(s) are contained and vented to the control device. The requirements for automatic approval are as follows:

(A) The total area of all natural draft openings shall not exceed 5% of the total surface area of the total enclosure's walls, floor, and ceiling;

(B) All sources of emissions within the enclosure shall be a minimum of four equivalent diameters away from each natural draft opening;

(C) The average inward face velocity (FV) across all natural draft openings shall be a minimum of 3,600 meters per hour as determined by the following procedures:

(1) All forced makeup air ducts and all exhaust ducts are constructed so that the volumetric flow rate in each can be accurately determined by the test methods and procedures specified in §63.750(g) (10) and (11); volumetric flow rates shall be calculated without the adjustment normally made for moisture content; and

(2) Determine FV by equation 14:

$$FV = \frac{\sum_{j=1}^n Q_{out j} - \sum_{i=1}^p Q_{in i}}{\sum_{k=1}^q A_k} \quad \text{Eq. 14}$$

(D) The air passing through all natural draft openings shall flow into the enclosure continuously. If FV is less than or equal to 9,000 meters per hour, the continuous inward flow of air shall be verified by continuous observation using smoke tubes, streamers, tracer gases, or other means approved by the Administrator over the period that the volumetric flow rate tests required to determine FV are carried out. If FV is greater than 9,000 meters per hour, the direction of airflow through the natural draft openings shall be presumed to be inward at all times without verification.

(ii) Determine the control device efficiency using equation 10 or equations 12 and 13, as applicable, and the test methods and procedures specified in §63.750(g) (9) through (14).

(iii) Compliance shall be achieved if the installation of a total enclosure is demonstrated and the value of E determined from equation 10 (or the value of H<sub>sys</sub> determined from equations 12 and 13, as applicable) is equal to or greater than the overall HAP control efficiencies required under §63.745(d), §63.746(c), or §63.747(d).

(5) When nonregenerative carbon adsorbers are used to comply with §63.745(d), §63.746(c), or §63.747(d), the owner or operator may conduct a design evaluation to demonstrate initial compliance in lieu of following the compliance test procedures of paragraphs (g)(1), (2), (3), and (4) of this section. The design evaluation shall consider the vent stream composition, component concentrations, flow rate, relative humidity, and temperature, and shall establish the design exhaust vent stream organic compound concentration level, capacity of the carbon bed, type and working capacity of activated carbon used for the carbon bed, and design carbon replacement interval

based on the total carbon working capacity of the control device and the emission point operating schedule.

(6)(i) To demonstrate initial compliance with § 63.745(d), § 63.746(c), or § 63.747(d) when hard piping or ductwork is used to direct VOC and HAP emissions from a VOC and HAP source to the control device, each owner or operator shall demonstrate upon inspection that the criteria of paragraph (g)(6)(i)(A) and paragraph (g)(6)(i)(B) or (C) of this section VR/FD are met.

(A) The equipment shall be vented to a control device.

(B) The control device efficiency ( $E$  or  $H_{\text{sys}}$ , as applicable) determined using equation 10 or equations 12 and 13, respectively, and the test methods and procedures specified in § 63.750(g) (9) through (14), shall be equal to or greater than the overall HAP control efficiency required by § 63.745(d), § 63.746(c), or § 63.747(d).

(C) When a nonregenerative carbon adsorber is used, the ductwork from the affected emission point(s) shall be vented to the control device and the carbon adsorber shall be demonstrated, through the procedures of § 63.750(g) (1), (2), (3), (4), or (5), to meet the requirements of § 63.745(d), § 63.746(c), or § 63.747(d).

(7) Startups and shutdowns are normal operation for this source category. Emissions from these activities are to be included when determining if the standards specified in § 63.745(d), § 63.746(c), or § 63.747(d) are being attained.

(8) An owner or operator who uses compliance techniques other than those specified in this subpart shall submit a description of those compliance procedures, subject to the Administrator's approval, in accordance with § 63.7(f) of subpart A.

(9) Either EPA Method 18 or EPA Method 25A of appendix A of part 60, as appropriate to the conditions at the site, shall be used to determine VOC and HAP concentration of air exhaust streams as required by § 63.750(g) (1) through (6). The owner or operator shall submit notice of the intended test method to the Administrator for approval along with the notification of the performance test required under § 63.7(b). Method selection shall be

based on consideration of the diversity of organic species present and their total concentration and on consideration of the potential presence of interfering gases. Except as indicated in paragraphs (g)(9) (i) and (ii) of this section, the test shall consist of three separate runs, each lasting a minimum of 30 minutes.

(i) When either EPA Method 18 or EPA Method 25A is to be used in the determination of the efficiency of a fixed-bed carbon adsorption system with a common exhaust stack for all the individual carbon adsorber vessels pursuant to § 63.750(g) (2) or (3), the test shall consist of three separate runs, each coinciding with one or more complete sequences through the adsorption cycles of all of the individual carbon adsorber vessels.

(ii) When either EPA Method 18 or EPA Method 25A is to be used in the determination of the efficiency of a fixed-bed carbon adsorption system with individual exhaust stacks for each carbon adsorber vessel pursuant to § 63.750(g) (3) or (4), each carbon adsorber vessel shall be tested individually. The test for each carbon adsorber vessel shall consist of three separate runs. Each run shall coincide with one or more complete adsorption cycles.

(10) EPA Method 1 or 1A of appendix A of part 60 is used for sample and velocity traverses.

(11) EPA Method 2, 2A, 2C, or 2D of appendix A of part 60 is used for velocity and volumetric flow rates.

(12) EPA Method 3 of appendix A of part 60 is used for gas analysis.

(13) EPA Method 4 of appendix A of part 60 is used for stack gas moisture.

(14) EPA Methods 2, 2A, 2C, 2D, 3, and 4 shall be performed, as applicable, at least twice during each test period.

(h) *Overall VOC and/or organic HAP control efficiency—control devices other than carbon adsorbers.* Calculate the overall control efficiency of a control system with a control device other than a carbon adsorber using the following procedure.

(1) Calculate the overall control efficiency using equation 15:

$$E_k = R_k F_k \quad \text{Eq. 15}$$

where

$E_k$ =overall VOC and/or organic HAP control efficiency (expressed as a decimal) of control system k.

$R_k$ =destruction or removal efficiency (expressed as a decimal) of total organic compounds or total organic HAP for control device k as determined under paragraph (h)(2) of this section.

$F_k$ =capture efficiency (expressed as a decimal) of capture system k as determined under paragraph (h)(3) of this section.

(2) The organic HAP destruction or removal efficiency  $R_k$  of a control device other than a carbon adsorber shall be determined using the procedures described below. The destruction efficiency may be measured as either total organic HAP or as TOC minus methane and ethane according to these procedures.

(i) Use Method 1 or 1A of 40 CFR part 60, appendix A, as appropriate, to select the sampling sites.

(ii) Determine the gas volumetric flow rate using Method 2, 2A, 2C, or 2D of 40 CFR part 60, appendix A, as appropriate.

(iii) Use Method 18 of 40 CFR part 60, appendix A, to measure either TOC minus methane and ethane or total organic HAP. Alternatively, any other method or data that have been validated according to the applicable procedures in Method 301 of this part may be used.

(iv) Use the following procedure to calculate the destruction or removal efficiency:

(A) The destruction or removal efficiency test shall consist of three runs. The minimum sampling time for each run shall be 1 hour in which either an integrated sample or a minimum of four grab samples shall be taken. If grab sampling is used, the samples shall be taken at approximately equal intervals in time such as 15-minute intervals during the run.

(B) Calculate the mass rate of either TOC (minus methane and ethane) or total organic HAP ( $E_i$ ,  $E_o$  using equations 16 and 17:

$$E_i = K_2 \left( \sum_{j=1}^n C_{ij} M_{ij} \right) Q_i \quad \text{Eq. 16}$$

$$E_o = K_2 \left( \sum_{j=1}^n C_{oj} M_{oj} \right) Q_o \quad \text{Eq. 17}$$

where

$E_i$ ,  $E_o$ =mass rate of TOC (minus methane and ethane) or total organic HAP at the inlet and outlet of the control device, respectively, dry basis, kg/hr.

$K_2$ =constant,  $2.494 \times 10^{-6}$  (parts per million)<sup>-1</sup> (gram-mole per standard cubic meter) (kilogram/gram) (minute/hour), where standard temperature for (gram-mole per standard cubic meter) is 20° C.

$n$ =number of sample components in the gas stream.

$C_{ij}$ ,  $C_{oj}$ =concentration of sample component j of the gas stream at the inlet and outlet of the control device, respectively, dry basis, parts per million by volume.

$M_{ij}$ ,  $M_{oj}$ =molecular weight of sample component j of the gas stream at the inlet and outlet of the control device, respectively, gram/gram-mole.

$Q_i$ ,  $Q_o$ =flow rate of gas stream at the inlet and outlet of the control device, respectively, dry standard cubic meter per minute.

(1) Where the mass rate of TOC is being calculated, all organic compounds (minus methane and ethane) measured by EPA Method 18 shall be summed using equation 16 in paragraph (h)(2)(iv)(B) of this section.

(2) Where the mass rate of total organic HAP is being calculated, only the organic HAP species shall be summed using equation 17 in paragraph (h)(2)(iv)(B) of this section. The list of organic HAP is provided in §63.104 of subpart F of this part.

(C) Calculate the destruction or removal efficiency for TOC (minus methane and ethane) or total organic HAP using equation 18:

$$R = \frac{E_i - E_o}{E_i} \times 100 \quad \text{Eq. 18}$$

where

R=destruction or removal efficiency of control device, percent.

$E_i$ =mass rate of TOC (minus methane and ethane) or total organic HAP at the inlet to the control device as calculated under paragraph (h)(2)(iv)(B) of this section, kg TOC per hour or kg organic HAP per hour.

$E_o$ =mass rate of TOC (minus methane and ethane) or total organic HAP at the outlet of the control device, as calculated under paragraph (h)(2)(iv)(B) of this section, kg TOC per hour or kg organic HAP per hour.

(3) Determine the capture efficiency  $F_k$  of each capture system to which organic HAP and VOC emissions from coating operations are vented. The capture efficiency value shall be determined using Procedure T—Criteria for and Verification of a Permanent or Temporary Total Enclosure as found in appendix B to § 52.741 of part 52 of this chapter for total enclosures, and the capture efficiency protocol specified in § 52.741(a)(4)(iii) of part 52 of this chapter for all other enclosures.

(i)(1) *Alternative application method—primers and topcoats.* Each owner or operator seeking to use an alternative application method (as allowed in § 63.745(f)(1)(ix)) in complying with the standards for primers and topcoats shall use the procedures specified in paragraphs (i)(2) and (i)(3) of this section to determine the organic HAP and VOC emission levels of the alternative application technique as compared to either HVLP or electrostatic spray application methods.

(2)(i) For the process or processes for which the alternative application method is to be used, the total organic HAP and VOC emissions shall be determined for an initial 30-day period, the period of time required to apply coating to five completely assembled aircraft, or a time period approved by the permitting agency. During this initial period, only HVLP or electrostatic spray application methods shall be used. The emissions shall be deter-

mined based on the volumes, organic HAP contents (less water), and VOC contents (less water and exempt solvents) of the coatings as applied.

(ii) Upon implementation of the alternative application method, use the alternative application method in production on actual production parts or assemblies for a period of time sufficient to coat an equivalent amount of parts and assemblies with coatings identical to those used in the initial 30-day period. The actual organic HAP and VOC emissions shall be calculated for this post-implementation period.

(iii) Calculate both the organic HAP and VOC emission reduction using equation 19:

$$P = \frac{E_b - E_a}{E_b} \times 100 \quad \text{Eq. 19}$$

where

P=organic HAP or VOC emission reduction, percent.

$E_b$ =organic HAP or VOC emissions, in pounds, before the alternative application technique was implemented, as determined under paragraph (i)(2)(i) of this section.

$E_a$ =organic HAP or VOC emissions, in pounds, after the alternative application technique was implemented, as determined under paragraph (i)(2)(ii) of this section.

(3) Each owner or operator seeking to demonstrate that an alternative application method achieves emission reductions equivalent to HVLP or electrostatic spray application methods shall comply with the following:

(i) Each coating shall be applied such that the dried film thickness is within the range specified by the applicable specification(s) for the aerospace vehicle or component being coated.

(ii) If no such dried film thickness specification(s) exists, the owner or operator shall ensure that the dried film thickness applied during the initial 30-day period is equivalent to the dried film thickness applied during the alternative application method test period for similar aerospace vehicles or components.

(iii) Failure to comply with these dried film thickness requirements shall invalidate the test results obtained under paragraph (i)(2)(i) of this section.

(j) *Spot stripping and decal removal.* Each owner or operator seeking to comply with §63.746(b)(3) shall determine the volume of organic HAP-containing chemical strippers used per aircraft using the procedure specified in paragraphs (j)(1) through (j)(3) of this section.

(1) For each chemical stripper used for spot stripping and decal removal, determine for each annual period the total volume as applied using the procedure specified in paragraph (d)(2) of this section.

(2) Determine the total number of aircraft for which depainting operations began during the annual period as determined from company records.

(3) Calculate the annual average volume of organic HAP used for spot stripping and decal removal per aircraft using equation 20:

$$C = \frac{\sum_{i=1}^n V_{si}}{A} \quad \text{Eq. 20}$$

where

C=annual average volume (gal per aircraft) of organic HAP-containing chemical stripper used for spot stripping and decal removal.

n=number of organic HAP-containing chemical strippers used in the annual period.

V<sub>si</sub>=volume (gal) of organic HAP-containing chemical stripper i used during the annual period.

A=number of aircraft for which depainting operations began during the annual period.

(k) *Organic HAP content level determination—compliant chemical milling maskants.* For those uncontrolled chemical milling maskants complying with the chemical milling maskant organic HAP content limit specified in §63.747(c)(1) without being averaged, the following procedures shall be used to determine the mass of organic HAP emitted per volume of coating (less water) as applied.

(1) For coatings that contain no exempt solvents, determine the total organic HAP content using manufacturer's supplied data or Method 24 of 40 CFR part 60, appendix A to determine the VOC content. The VOC content

shall be used as a surrogate for total HAP content for coatings that contain no exempt solvent. If there is a discrepancy between the manufacturer's formulation data and the results of the Method 24 analysis, compliance shall be based on the results from the Method 24 analysis.

When Method 24 is used to determine the VOC content of water-reducible coatings, the precision adjustment factors in Reference Method 24 shall be used. If the adjusted analytical VOC content is less than the formulation solvent content, then the analytical VOC content should be set equal to the formulation solvent content.

(2) [Reserved]

(1) *Organic HAP content level determination—averaged chemical milling maskants.* For those uncontrolled chemical milling maskants that are averaged together in order to comply with the chemical milling maskant organic HAP content level specified in §63.747(c)(1), the procedure specified in paragraphs (l)(1) through (l)(4) of this section shall be used to determine the monthly volume-weighted average mass of organic HAP emitted per volume of chemical milling maskant (less water) as applied, unless the permitting agency specifies a shorter averaging period as part of an ambient ozone control program.

(1) Determine the total organic HAP weight fraction as applied of each chemical milling maskant used during each 30-day period using the procedure specified in paragraph (d)(1) of this section.

(2) Determine for each 30-day period:

(i) The individual volume of each chemical milling maskant applied in terms of total gallons (less water) (using the procedure specified in paragraph (d)(2) of this section), and

(ii) The total volume in gallons of all chemical milling maskants (less water) as applied by summing the individual volumes of each chemical milling maskant as applied (less water).

(3) Determine the density of each chemical milling maskant as applied used during each 30-day period using the procedure specified in paragraph (d)(3) of this section.

(4) Calculate the volume-weighted average mass of organic HAP emitted

per unit volume (lb/gal) of chemical milling maskant (less water) as applied for all chemical milling maskants during each 30-day period using equation 21:

$$H_a = \frac{\sum_{i=1}^n W_{Hi} D_{mi} V_{mi}}{M_{lw}} \quad \text{Eq. 21}$$

where

$H_a$ =volume-weighted mass of organic HAP emitted per unit volume of chemical milling maskants (lb/gal) (less water) as applied during each 30-day period for those chemical milling maskants being averaged.

$n$ =number of chemical milling maskants being averaged.

$W_{Hi}$ =weight fraction (expressed as a decimal) of organic HAP in chemical milling maskant  $i$  (less water) as applied during each 30-day period that is averaged.

$D_{mi}$ =density (lb chemical milling maskant per gal coating) of chemical milling maskant  $i$  as applied during each 30-day period that is averaged.

$V_{mi}$ =volume (gal) of chemical milling maskant  $i$  (less water) as applied during the 30-day period that is averaged.

$M_{lw}$ =total volume (gal) of all chemical milling maskants (less water) as applied during each 30-day period that is averaged.

(m) *VOC content level determination—compliant chemical milling maskants.* For those uncontrolled chemical milling maskants complying with the chemical milling maskant VOC content limit specified in §63.747(c)(2) without being averaged, the procedure specified in paragraphs (m)(1) and (m)(2) of this section shall be used to determine the mass of VOC emitted per volume of chemical milling maskant (less water and exempt solvents) as applied.

(1) Determine the mass of VOC emitted per unit volume of chemical milling maskant (lb/gal) (less water and exempt solvents) as applied,  $G_i$ , for each chemical milling maskant using the procedures specified in paragraphs (e)(1) and (e)(2) of this section.

(2)(i) If the VOC content is found to be different when EPA Method 24 is used during an enforcement inspection from that used by the owner or operator in calculating  $G_i$ , compliance shall be based, except as provided in paragraph (m)(2)(ii) of this section, upon the VOC content obtained using EPA Method 24.

(ii) If the VOC content of a chemical milling maskant obtained using EPA Method 24 would indicate noncompliance as determined under §63.749(h)(3)(i), an owner or operator may elect to average the chemical milling maskant with other uncontrolled chemical milling maskants and (re)calculate  $G_a$  (using the procedure specified in paragraph (n) of this section), provided appropriate and sufficient records were maintained for all chemical milling maskants included in the average recalculation. The (re)calculated value of  $G_a$  for the averaged chemical milling maskants shall then be used to determine compliance.

(n) *VOC content level determination—averaged chemical milling maskants.* For those uncontrolled chemical milling maskants that are averaged together in order to comply with the chemical milling maskant VOC content limit specified in §63.747(c)(2), the procedure specified in paragraphs (n)(1) through (n)(4) of this section shall be used to determine the monthly volume-weighted average mass of VOC emitted per volume of chemical milling maskant (less water and exempt solvents) as applied, unless the permitting agency specifies a shorter averaging period as part of an ambient ozone control program.

(1) Determine the VOC content of each chemical milling maskant (less water and exempt solvents) as applied used during each 30-day period using the procedure specified in paragraph (f)(1) of this section.

(2)(i) Determine the individual volume of each chemical milling maskant applied in terms of total gallons (less water and exempt solvents) using the procedure specified in paragraph (f)(2) of this section, and

(ii) Calculate the total volume in gallons of all chemical milling maskants

(less water and exempt solvents) as applied by summing the individual volumes of each chemical milling maskant (less water and exempt solvents) as applied.

(3) Calculate the volume-weighted average mass of VOC emitted per unit volume (lb/gal) of chemical milling maskant (less water and exempt solvents) as applied during each 30-day period using equation 22:

$$G_a = \frac{\sum_{i=1}^n (\text{VOC})_{mi} V_{mi}}{M_{lwes}} \quad \text{Eq. 22}$$

where

$G_a$ =volume-weighted average mass of VOC per unit volume of chemical milling maskant (lb/gal) (less water and exempt solvents) as applied during each 30-day period for those chemical milling maskants that are averaged.

$n$ =number of chemical milling maskants being averaged.

$(\text{VOC})_{mi}$ =VOC content (lb/gal) of chemical milling maskant  $i$  (less water and exempt solvents) as applied during the 30-day period that is averaged.

$V_{mi}$ =volume (gal) of chemical milling maskant  $i$  (less water and exempt solvents) as applied during the 30-day period that is averaged.

$M_{lwes}$ =total volume (gal) of all chemical milling maskants (less water and exempt solvents) as applied during each 30-day period that is averaged.

(4)(i) If the VOC content is found to be different when EPA Method 24 is used during an enforcement inspection from that used by the owner or operator in calculating  $G_a$ , recalculation of  $G_a$  is required using the new value. If more than one chemical milling maskant is involved, the recalculation shall be made once using all of the new values.

(ii) If recalculation is required, an owner or operator may elect to include in the recalculation of  $G_a$  uncontrolled chemical milling maskants that were not previously included provided appropriate and sufficient records were maintained for these other chemical

milling maskants to allow daily recalculations.

(iii) The recalculated value of  $G_a$  under either paragraph (n)(4)(i) or (n)(4)(ii) of this section shall be used to determine compliance.

**§ 63.751 Monitoring requirements.**

(a) *Enclosed spray gun cleaners.* Each owner or operator using an enclosed spray gun cleaner under § 63.744(c)(1) shall visually inspect the seals and all other potential sources of leaks associated with each enclosed gun spray cleaner system at least once per month. Each inspection shall occur while the system is in operation.

(b) *Incinerators and carbon adsorbers—initial compliance demonstrations.* Each owner or operator subject to the requirements in this subpart must demonstrate initial compliance with the requirements of § 63.745(d), § 63.746(c), and § 63.747(d) of this subpart. Each owner or operator using a carbon adsorber to comply with the requirements in this subpart shall comply with the requirements specified in paragraphs (b)(1) through (b)(7) of this section. Each owner or operator using an incinerator to comply with the requirements in this subpart shall comply with the requirements specified in paragraphs (b)(9) through (b)(12) of this section.

(1) Except as allowed by paragraph (b)(2) or (b)(5) of this section, for each control device used to control organic HAP or VOC emissions, the owner or operator shall fulfill the requirements of paragraph (b)(1) (i) or (ii) of this section.

(i) The owner or operator shall establish as a site-specific operating parameter the outlet total HAP or VOC concentration that demonstrates compliance with § 63.745(d), § 63.746(c), or § 63.747(d) as appropriate; or

(ii) The owner or operator shall establish as the site-specific operating parameter the control device efficiency that demonstrates compliance with § 63.745(d), § 63.746(c), or § 63.747(d).

(iii) When a nonregenerative carbon adsorber is used to comply with § 63.745(d), § 63.746(c), or § 63.747(d), the site-specific operating parameter value may be established as part of the design evaluation used to demonstrate

initial compliance. Otherwise, the site-specific operating parameter value shall be established during the initial performance test conducted according to the procedures of § 63.750(g).

(2) For each nonregenerative carbon adsorber, in lieu of meeting the requirements of § 63.751(b)(1), the owner or operator may establish as the site-specific operating parameter the carbon replacement time interval, as determined by the maximum design flow rate and organic concentration in the gas stream vented to the carbon adsorption system. The carbon replacement time interval shall be established either as part of the design evaluation to demonstrate initial compliance or during the initial performance test conducted according to the procedures in § 63.750(g) (1), (2), (3), or (4).

(3) Each owner or operator venting solvent HAP emissions from a source through a room, enclosure, or hood, to a control device to comply with § 63.745(d), § 63.746(c), or § 63.747(d) shall:

(i) Submit to the Administrator with the compliance status report required by § 63.9(h) of the General Provisions a plan that:

(A) Identifies the operating parameter to be monitored to ensure that the capture efficiency measured during the initial compliance test is maintained;

(B) Discusses why this parameter is appropriate for demonstrating ongoing compliance; and

(C) Identifies the specific monitoring procedures;

(ii) Set the operating parameter value, or range of values, that demonstrate compliance with § 63.745(d), § 63.746(c), or § 63.747(d), as appropriate; and

(iii) Conduct monitoring in accordance with the plan submitted to the Administrator unless comments received from the Administrator require an alternate monitoring scheme.

(4) Owners or operators subject to § 63.751(b) (1), (2), or (3) shall calculate the site-specific operating parameter value, or range of values, as the arithmetic average of the maximum and/or minimum operating parameter values, as appropriate, that demonstrate compliance with § 63.745(d), § 63.746(c), or § 63.747(d) during the multiple test runs required by § 63.750 (g)(2) and (g)(1).

(5) For each solvent recovery device used to comply with § 63.745(d), § 63.746(c), or § 63.747(d), in lieu of meeting the requirements of paragraph (b)(1) of this section, the results of the material balance calculation conducted in accordance with § 63.750(g)(1) may serve as the site-specific operating parameter that demonstrates compliance with § 63.745(d), § 63.746(c), or § 63.747(d).

(6) *Continuous compliance monitoring.* Following the date on which the initial compliance demonstration is completed, continuous compliance with § 63.745(d), § 63.746(c), or § 63.747(d) of this subpart shall be demonstrated as outlined in this paragraph.

(i) Each owner or operator of an affected source subject to § 63.745(d), § 63.746(c), or § 63.747(d) of this subpart shall monitor the applicable parameters specified in paragraph (b)(6)(ii), (b)(6)(iii), or (b)(6)(iv) of this section depending on the type of control technique used.

(ii) Compliance monitoring shall be subject to the following provisions:

(A) Except as allowed by paragraph (b)(7)(iii)(A)(3) of this section, all continuous emission monitors shall comply with performance specification (PS) 8 or 9 in 40 CFR part 60, appendix B, as appropriate depending on whether VOC or HAP concentration is being measured. The requirements in appendix F of 40 CFR part 60 shall also be followed. In conducting the quarterly audits required by appendix F, owners or operators shall challenge the monitors with compounds representative of the gaseous emission stream being controlled.

(B) If the effluent from multiple emission points are combined prior to being channeled to a common control device, the owner or operator is required only to monitor the common control device, not each emission point.

(iii) Owners or operators complying with § 63.745(d), § 63.746(c), or § 63.747(d) through the use of a control device and establishing a site-specific operating parameter in accordance with paragraph (b)(1) shall fulfill the requirements of paragraph (b)(7)(iii)(A) of this section and paragraph (b)(7)(iii) (B) or (C) of this section, as appropriate.

(A) The owner or operator shall install, calibrate, operate, and maintain a continuous emission monitor.

(1) The continuous emission monitor shall be used to measure continuously the total HAP or VOC concentration at both the inlet and the outlet whenever HAP from coating and paint stripping operations are vented to the control device, or when continuous compliance is demonstrated through a percent efficiency calculation; or

(2) For owners or operators using a nonregenerative carbon adsorber, in lieu of using continuous emission monitors as specified in paragraph (b)(7)(iii)(A)(1) of this section, the owner or operator may use a portable monitoring device to monitor total HAP or VOC concentration at the inlet and outlet, or the outlet of the carbon adsorber, as appropriate.

(a) The monitoring device shall be calibrated, operated, and maintained in accordance with the manufacturer's specifications.

(b) The monitoring device shall meet the requirements of part 60, appendix A, Method 21, sections 2, 3, 4.1, 4.2, and 4.4. The calibration gas shall either be representative of the compounds to be measured or shall be methane, and shall be at a concentration associated with 125% of the expected organic compound concentration level for the carbon adsorber outlet vent.

(c) The probe inlet of the monitoring device shall be placed at approximately the center of the carbon adsorber outlet vent. The probe shall be held there for at least 5 minutes during which flow into the carbon adsorber is expected to occur. The maximum reading during that period shall be used as the measurement.

(B) If complying with § 63.745(d), § 63.746(c), or § 63.747(d) through the use of a carbon adsorption system with a common exhaust stack for all of the carbon vessels, the owner or operator shall not operate the control device at an average control efficiency less than that required by § 63.745(d), § 63.746(c), or § 63.747(d) for three consecutive adsorption cycles.

(C) If complying with § 63.745(d), § 63.746(c), or § 63.747(d) through the use of a carbon adsorption system with individual exhaust stacks for each of the

multiple carbon adsorber vessels, the owner or operator shall not operate any carbon adsorber vessel at an average control efficiency less than that required by § 63.745(d), § 63.746(c), or § 63.747(d) as calculated daily using a 7 to 30-day rolling average.

(D) If complying with § 63.745(d), § 63.746(c), or § 63.747(d) through the use of a nonregenerative carbon adsorber, in lieu of the requirements of paragraph (b)(7)(iii)(B) or (C) of this section, the owner or operator may replace the carbon in the carbon adsorber system with fresh carbon at a regular predetermined time interval as determined in accordance with paragraph (b)(2) of this section.

(iv) Owners or operators complying with § 63.745(d), § 63.746(c), or § 63.747(d) by capturing emissions through a room, enclosure, or hood shall install, calibrate, operate, and maintain the instrumentation necessary to measure continuously the site-specific operating parameter established in accordance with paragraph (b)(3) of this section whenever VOC and HAP from coating and stripper operations are vented through the capture device. The capture device shall not be operated at an average value greater than or less than (as appropriate) the operating parameter value established in accordance with paragraph (b)(3) of this section for any 3-hour period.

(7) Owners or operators complying with paragraph (b)(4) or (b)(5) of this section shall calculate the site-specific operating parameter value as the arithmetic average of the minimum operating parameter values that demonstrate compliance with § 63.745(d) and § 63.747(d) during the three test runs required by § 63.750(h)(2)(iv).

(8) All temperature monitoring equipment shall be installed, calibrated, maintained, and operated according to manufacturer's specifications. Every 3 months, facilities shall replace the temperature sensors or have the temperature sensors recalibrated. As an alternative, a facility may use a continuous emission monitoring system (CEMS) to verify that there has been no change in the destruction efficiency and effluent composition of the incinerator.

(9) Where an incinerator other than a catalytic incinerator is used, a thermocouple equipped with a continuous recorder shall be installed and continuously operated in the firebox or in the ductwork immediately downstream of the firebox in a position before any substantial heat exchange occurs.

(10) Where a catalytic incinerator is used, thermocouples, each equipped with a continuous recorder, shall be installed and continuously operated in the gas stream immediately before and after the catalyst bed.

(11) For each incinerator other than a catalytic incinerator, each owner or operator shall establish during each performance test during which compliance is demonstrated, including the initial performance test, the minimum combustion temperature as a site-specific operating parameter. This minimum combustion temperature shall be the operating parameter value that demonstrates compliance with § 63.745(d) and § 63.747(d).

(12) For each catalytic incinerator, each owner or operator shall establish during each performance test during which compliance is demonstrated, including the initial performance test, the minimum gas temperature upstream of the catalyst bed and the minimum gas temperature difference across the catalyst bed as site-specific operating parameters. These minimum temperatures shall be the operating parameter values that demonstrate compliance with § 63.745(d) and § 63.747(d).

(c) *Dry particulate filter, HEPA filter, and waterwash systems—primer and top-coat application operations.* (1) Each owner or operator using a dry particulate filter system or a HEPA filter system to meet the requirements of § 63.745(g)(2) shall continuously monitor the pressure drop across the system.

(2) Each owner or operator using a waterwash system to meet the requirements of § 63.745(g)(2) shall continuously monitor the water flow rate through the system.

(d) *Particulate filters and waterwash booths—depainting operations.* Each owner or operator using a dry particulate filter or waterwash system in accordance with the requirements of § 63.746(b)(4) shall continuously monitor the pressure drop across the particu-

late filters or the water flow rate through the waterwash system.

(e) *Use of an alternative monitoring method.* (1) *General.* Until permission to use an alternative monitoring method has been granted by the Administrator under this paragraph, the owner or operator of an affected source shall remain subject to the requirements of this section.

(2) After receipt and consideration of written application, the Administrator may approve alternatives to any monitoring methods or procedures of this section including, but not limited to, the following:

(i) Alternative monitoring requirements when the affected source is infrequently operated; or

(ii) Alternative locations for installing continuous monitoring systems when the owner or operator can demonstrate that installation at alternate locations will enable accurate and representative measurements; or

(iii) Alternatives to the American Society for Testing and Materials (ASTM) test methods or sampling procedures specified in this section.

(3) If the Administrator finds reasonable grounds to dispute the results obtained by an alternative monitoring method, requirement, or procedure, the Administrator may require the use of a method, requirement, or procedure specified in this section. If the results of the specified and the alternative method, requirement, or procedure do not agree, the results obtained by the specified method, requirement, or procedure shall prevail.

(4)(i) *Request to use alternative monitoring method.* An owner or operator who wishes to use an alternative monitoring method shall submit an application to the Administrator as described in paragraph (e)(4)(ii) of this section. The application may be submitted at any time provided that the monitoring method is not used to demonstrate compliance with a relevant standard or other requirement. If the alternative monitoring method is to be used to demonstrate compliance with a relevant standard, the application shall be submitted not later than with the site-specific test plan required in § 63.7(c) (if requested) or with the site-specific performance evaluation plan

(if requested), or at least 60 days before the performance evaluation is scheduled to begin.

(ii) The application shall contain a description of the proposed alternative monitoring system and information justifying the owner's or operator's request for an alternative monitoring method, such as the technical or economic infeasibility, or the impracticality, of the affected source using the required method.

(iii) The owner or operator may submit the information required in this paragraph well in advance of the submittal dates specified in paragraph (e)(4)(i) of this section to ensure a timely review by the Administrator in order to meet the compliance demonstration date specified in this subpart.

(5) *Approval of request to use alternative monitoring method.* (i) The Administrator will notify the owner or operator of his/her intention to deny approval of the request to use an alternative monitoring method within 60 calendar days after receipt of the original request and within 60 calendar days after receipt of any supplementary information that is submitted. If notification of intent to deny approval is not received within 60 calendar days, the alternative monitoring method is to be considered approved. Before disapproving any request to use an alternative monitoring method, the Administrator will notify the applicant of the Administrator's intent to disapprove the request together with:

(A) Notice of the information and findings on which the intended disapproval is based; and

(B) Notice of opportunity for the owner or operator to present additional information to the Administrator before final action on the request. At the time the Administrator notifies the applicant of his or her intention to disapprove the request, the Administrator will specify how much time the owner or operator will have after being notified of the intended disapproval to submit the additional information.

(ii) If the Administrator approves the use of an alternative monitoring method for an affected source under paragraph (e)(5)(i) of this section, the owner or operator of such source shall con-

tinue to use the alternative monitoring method until approval is received from the Administrator to use another monitoring method as allowed by paragraph (e) of this section.

(f) *Reduction of monitoring data.* (1) The data may be recorded in reduced or nonreduced form (e.g., parts per million (ppm) pollutant and % O<sub>2</sub> or nanograms per Joule (ng/J) of pollutant).

(2) All emission data shall be converted into units specified in this subpart for reporting purposes. After conversion into units specified in this subpart, the data may be rounded to the same number of significant digits as used in this subpart to specify the emission limit (e.g., rounded to the nearest 1% overall reduction efficiency).

#### § 63.752 Recordkeeping requirements.

(a) *General.* Each owner or operator of a source subject to this subpart shall fulfill all recordkeeping requirements specified in § 63.10 (a), (b), (d), and (f).

(b) *Cleaning operation.* Each owner or operator of a new or existing cleaning operation subject to this subpart shall record the information specified in paragraphs (b)(1) through (b)(5) of this section, as appropriate.

(1) The name, vapor pressure, and documentation showing the organic HAP constituents of each cleaning solvent used at the facility.

(2) For each cleaning solvent used in hand-wipe cleaning operations that complies with the composition requirements specified in § 63.744(b)(1) or for semi-aqueous cleaning solvents used for flush cleaning operations:

(i) The name of each cleaning solvent used;

(ii) All data and calculations that demonstrate that the cleaning solvent complies with one of the composition requirements; and

(iii) Annual records of the volume of each solvent used, as determined from facility purchase records or usage records.

(3) For each cleaning solvent used in hand-wipe cleaning operations that does not comply with the composition requirements in § 63.744(b)(1), but does comply with the vapor pressure requirement in § 63.744(b)(2):

(i) The name of each cleaning solvent used;

(ii) The composite vapor pressure of each cleaning solvent used;

(iii) All vapor pressure test results, if appropriate, data, and calculations used to determine the composite vapor pressure of each cleaning solvent; and

(iv) The amount (in gallons) of each cleaning solvent used each month at each operation.

(4) For each cleaning solvent used for the exempt hand-wipe cleaning operations specified in § 63.744(e) that does not conform to the vapor pressure or composition requirements of § 63.744(b):

(i) The identity and amount (in gallons) of each cleaning solvent used each month at each operation; and

(ii) A list of the processes set forth in § 63.744(e) to which the cleaning operation applies.

(5) A record of all leaks from enclosed spray gun cleaners identified pursuant to § 63.751(a) that includes for each leak found:

(i) Source identification;

(ii) Date leak was discovered; and

(iii) Date leak was repaired.

(c) *Primer and topcoat application operations—organic HAP and VOC.* Each owner or operator required to comply with the organic HAP and VOC content limits specified in § 63.745(c) shall record the information specified in paragraphs (c)(1) through (c)(6) of this section, as appropriate.

(1) The name and VOC content as received and as applied of each primer and topcoat used at the facility.

(2) For uncontrolled primers (organic HAP content less than 350 g/l (2.9 lb/gal) less water as applied and VOC content less than 350 g/l (2.9 lb/gal) less water and exempt solvents as applied) and topcoats that meet the organic HAP and VOC content limits in § 63.745(c)(1) through (c)(4) without averaging:

(i) The mass of organic HAP emitted per unit volume of coating as applied (less water) ( $H_i$ ) and the mass of VOC emitted per unit volume of coating as applied (less water and exempt solvents) ( $G_i$ ) for each coating formulation within each coating category used each month (as calculated using the procedures specified in § 63.750(c) and (e));

(ii) All data, calculations, and test results (including EPA Method 24 results) used in determining the values of  $H_i$  and  $G_i$ ; and

(iii) The volume (gal) of each coating formulation within each coating category used each month.

(3) For “low HAP content” uncontrolled primers with organic HAP content less than or equal to 250 g/l (2.1 lb/gal) less water as applied and VOC content less than or equal to 250 g/l (2.1 lb/gal) less water and exempt solvents as applied:

(i) Annual purchase records of the total volume of each primer purchased; and

(ii) All data, calculations, and test results (including EPA Method 24 results) used in determining the organic HAP and VOC content as applied. These records shall consist of the manufacturer’s certification when the primer is applied as received, or the data and calculations used to determine  $H_i$  if not applied as received.

(4) For primers and topcoats complying with the organic HAP or VOC content level by averaging:

(i) The monthly volume-weighted average masses of organic HAP emitted per unit volume of coating as applied (less water) ( $H_a$ ) and of VOC emitted per unit volume of coating as applied (less water and exempt solvents) ( $G_a$ ) for all coatings (as determined by the procedures specified in § 63.750(d) and (f)); and

(ii) All data, calculations, and test results (including EPA Method 24 results) used to determine the values of  $H_a$  and  $G_a$ .

(5) For primers and topcoats that are controlled by a control device other than a carbon adsorber:

(i) The overall control efficiency of the control system (as determined using the procedures specified in § 63.750(h)) and all test results, data, and calculations used in determining the overall control efficiency;

(ii) If an incinerator other than a catalytic incinerator is used, continuous records of the firebox temperature recorded under § 63.751(b)(9) and all calculated 3-hour averages of the firebox temperature; and

(iii) If a catalytic incinerator is used, continuous records of the temperature

recorded under § 63.751(b)(10) and all calculated 3-hour averages of the recorded temperatures.

(6) For primer and topcoats that are controlled by a carbon adsorber:

(i) The overall control efficiency of the control system (as determined using the procedures specified in § 63.750(g)) and all test results, data, and calculations used in determining the overall control efficiency. The length of the rolling material balance period and all data and calculations used for determining this rolling period. The record of the certification of the accuracy of the device that measures the amount of HAP or VOC recovered; or

(ii) For nonregenerative carbon adsorbers, the overall control efficiency of the control system (as determined using the procedures specified in § 63.750(g)) and all test results, data, and calculations used in determining the overall control efficiency. The record of the carbon replacement time established as the site-specific operating parameter to demonstrate compliance.

(d) *Primer and topcoat application operations—inorganic HAP emissions.* (1) Each owner or operator complying with § 63.745(g) for the control of inorganic HAP emissions from primer and topcoat application operations through the use of a dry particulate filter system or a HEPA filter system shall record the pressure drop across the operating system once each shift during which coating operations occur.

(2) Each owner or operator complying with § 63.745(g) through the use of a waterwash system shall record the water flow rate through the operating system once each shift during which coating operations occur.

(3) This log shall include the acceptable limit(s) of pressure drop or water flow rate, as applicable, as specified by the filter or booth manufacturer or in locally prepared operating procedures.

(4) If 3-stage or HEPA filters are used at a new facility to control emissions from chromated primers or topcoats, records shall be kept of documentation supplied by the filter manufacturer that the filters in use meet the 3-stage or HEPA filter requirements.

(e) *Depainting operations.* Each owner or operator subject to the depainting standards specified in § 63.746 shall record the information specified in paragraphs (e)(1) through (e)(7) of this section, as appropriate.

(1) *General.* For all chemical strippers used in the depainting operation:

(i) The name of each chemical stripper; and

(ii) Monthly volumes of each organic-HAP containing chemical stripper used.

(2) For HAP-containing chemical strippers that are controlled by a carbon adsorber:

(i) The overall control efficiency of the control system (as determined using the procedures specified in § 63.750(g)) and all test results, data, and calculations used in determining the overall control efficiency. The length of the rolling material balance period and all data and calculations used for determining this rolling period. The record of the certification of the accuracy of the device that measures the amount of HAP or VOC recovered; or

(ii) For nonregenerative carbon adsorbers, the overall control efficiency of the control system (as determined using the procedures specified in § 63.750(g)) and all test results, data, and calculations used in determining the overall control efficiency. The record of the carbon replacement time established as the site-specific operating parameter to demonstrate compliance.

(3) For HAP-containing chemical strippers that are controlled by a control device other than a carbon adsorber:

(i) The overall control efficiency of the control system (as determined using the procedures specified in § 63.750(h)) and all test results, data, and calculations used in determining the overall control efficiency;

(ii) [Reserved]

(4) For each type of aircraft depainted at the facility, a listing of the parts, subassemblies, and assemblies normally removed from the aircraft before depainting. Prototype, test model or aircraft that exist in low numbers (i.e., less than 25 aircraft of

any one type) are exempt from this requirement.

(5) *Non-chemical based equipment.* If dry media blasting equipment is used to comply with the organic HAP emission limit specified in § 63.746(b)(1):

(i) The names and types of non-chemical based equipment; and

(ii) For periods of malfunction,

(A) The non-chemical method or technique that malfunctioned;

(B) The date that the malfunction occurred;

(C) A description of the malfunction;

(D) The methods used to repaint aerospace vehicles during the malfunction period;

(E) The dates that these methods were begun and discontinued; and

(F) The date that the malfunction was corrected.

(6) *Spot stripping and decal removal.* For spot stripping and decal removal, the volume of organic HAP-containing chemical stripper used, the annual average volume of organic HAP-containing stripper used per aircraft, the annual number of aircraft stripped, and all data and calculations used.

(7) *Inorganic HAP emissions.* The actual pressure drop across the particulate filters or the visual continuity of the water curtain and water flow rate for waterwash systems, once each shift in which the repainting process is in operation. This log shall include the acceptable limit(s) of the pressure drop as specified by the filter manufacturer and the visual continuity of the water curtain and water flow rate for waterwash systems as specified by the booth manufacturer or in locally prepared operating procedures.

(f) *Chemical milling maskant application operations.* Each owner or operator seeking to comply with the organic HAP and VOC content limits for the chemical milling maskant application operation, as specified in § 63.747(c), shall record the information specified in paragraphs (f)(1) through (f)(4) of this section, as appropriate.

(1) For uncontrolled chemical milling maskants that meet the organic HAP or VOC content limit without averaging:

(i) The mass of organic HAP emitted per unit volume of chemical milling maskant as applied (less water) ( $H_i$ )

and the mass of VOC emitted per unit volume of chemical milling maskant as applied (less water and exempt solvents) ( $G_i$ ) for each chemical milling maskant formulation used each month (as determined by the procedures specified in § 63.750 (k) and (m));

(ii) All data, calculations, and test results (including EPA Method 24 results) used in determining the values of  $H_i$  and  $G_i$ ; and

(iii) The volume (gal) of each chemical milling maskant formulation used each month.

(2) For chemical milling maskants complying with the organic HAP or VOC content level by averaging:

(i) The monthly volume-weighted average masses of organic HAP emitted per unit volume of chemical milling maskant as applied (less water) ( $H_a$ ) and of VOC emitted per unit volume of chemical milling maskant as applied (less water and exempt solvents) ( $G_a$ ) for all chemical milling maskants (as determined by the procedures specified in § 63.750 (l) and (n)); and

(ii) All data, calculations, and test results (including EPA Method 24 results) used to determine the values of  $H_a$  and  $G_a$ .

(3) For chemical milling maskants that are controlled by a carbon adsorber:

(i) The overall control efficiency of the control system (as determined using the procedures specified in § 63.750(g)) and all test results, data, and calculations used in determining the overall control efficiency. The length of the rolling material balance period and all data and calculations used for determining this rolling period. The record of the certification of the accuracy of the device that measures the amount of HAP or VOC recovered; or

(ii) For nonregenerative carbon adsorbers, the overall control efficiency of the control system (as determined using the procedures specified in § 63.750(g)) and all test results, data, and calculations used in determining the overall control efficiency. The record of the carbon replacement time established as the site-specific operating parameter to demonstrate compliance.

(4) For chemical milling maskants that are controlled by a control device other than a carbon adsorber:

(i) The overall control efficiency of the control system (as determined using the procedures specified in §63.750(h)) and all test results, data, and calculations used in determining the overall control efficiency;

(ii) If an incinerator other than a catalytic incinerator is used, continuous records of the firebox temperature recorded under §63.751(b)(9) and all calculated 3-hour averages of the firebox temperature; and

(iii) If a catalytic incinerator is used, continuous records of the temperature recorded under §63.751(b)(10) and all calculated 3-hour averages of the recorded temperatures.

**§63.753 Reporting requirements.**

(a)(1) Except as provided in paragraphs (a)(2) and (a)(3) of this section, each owner or operator subject to this subpart shall fulfill the requirements contained in §63.9 (a) through (e) and (h) through (j), Notification requirements, and §63.10 (a), (b), (d) and (f), Recordkeeping and reporting requirements, of the General Provisions, 40 CFR part 63, subpart A, except that the initial notification requirements for new or reconstructed affected sources in §63.9(b) (3) through (5) shall not apply. In addition to the requirements of §63.9(h), the notification of compliance status shall include:

(i) Information detailing whether the source has operated within the specified ranges of its designated operating parameters.

(ii) For each coating line, where averaging will be used along with the types of quantities of coatings the facility expects to use in the first year of operation. Averaging scheme shall be approved by the Administrator or delegated State authority and shall be included as part of the facility's title V or part 70 permit.

(2) For the purposes of this subpart, a title V or part 70 permit application may be used in lieu of the initial notification required under §63.9(b)(2), provided the same information is contained in the permit application as required by §63.9(b)(2), and the State to which the permit application has been

submitted has an approved operating permit program under part 70 of this chapter and has received delegation of authority from the EPA. Permit applications shall be submitted by the same due dates as those specified for the initial notifications.

(3) For the purposes of this subpart, the Administrator will notify the owner or operator in writing of approval or disapproval of the request for an adjustment to a particular time period or postmark deadline submitted under §63.9(i) within 30 calendar days of receiving sufficient information to evaluate the request, rather than 15 calendar days as provided for in §63.9(i)(3).

(b) *Cleaning operation.* Each owner or operator of a cleaning operation subject to this subpart shall submit the following information:

(1) Semiannual reports occurring every 6 months from the date of the notification of compliance status that identify:

(i) Any instance where a noncompliant cleaning solvent is used for a non-exempt hand-wipe cleaning operation;

(ii) A list of any new cleaning solvents used for hand-wipe cleaning in the previous 6 months and, as appropriate, their composite vapor pressure or notification that they comply with the composition requirements specified in §63.744(b)(1);

(iii) Any instance where a noncompliant spray gun cleaning method is used;

(iv) Any instance where a leaking enclosed spray gun cleaner remains unrepaired and in use for more than 15 days; and

(v) If the operations have been in compliance for the semiannual period, a statement that the cleaning operations have been in compliance with the applicable standards. Sources shall also submit a statement of compliance signed by a responsible company official certifying that the facility is in compliance with all applicable requirements.

(c) *Primer and topcoat application operations.* Each owner or operator of a primer or topcoat application operation subject to this subpart shall submit the following information:

(1) Semiannual reports occurring every 6 months from the date of the notification of compliance status that identify:

(i) For primers and topcoats where compliance is not being achieved through the use of averaging or a control device, each value of  $H_i$  and  $G_i$ , as recorded under § 63.752(c)(2)(i), that exceeds the applicable organic HAP or VOC content limit specified in § 63.745(c);

(ii) For primers and topcoats where compliance is being achieved through the use of averaging, each value of  $H_a$  and  $G_a$ , as recorded under § 63.752(c)(4)(i), that exceeds the applicable organic HAP or VOC content limit specified in § 63.745(c);

(iii) If incinerators are used to comply with the standards, all periods when the 3-hour average combustion temperature(s) is (are) less than the average combustion temperature(s) established under § 63.751(b) (11) or (12) during the most recent performance test during which compliance was demonstrated;

(iv) If a carbon adsorber is used;

(A) each rolling period when the overall control efficiency of the control system is calculated to be less than 81%, the initial material balance calculation, and any exceedances as demonstrated through the calculation; or,

(B) for nonregenerative carbon adsorbers, submit the design evaluation, the continuous monitoring system performance report, and any excess emissions as demonstrated through deviations of monitored values.

(v) For control devices other than an incinerator or carbon adsorber, each exceedance of the operating parameter(s) established for the control device under the initial performance test during which compliance was demonstrated;

(vi) All times when a primer or topcoat application operation was not immediately shut down when the pressure drop across a dry particulate filter or HEPA filter system, or the water flow rate through a waterwash system, as appropriate, was outside the limit(s) specified by the filter or booth manufacturer or in locally prepared operating procedures;

(vii) If the operations have been in compliance for the semiannual period, a statement that the operations have been in compliance with the applicable standards; and,

(2) Annual reports beginning 12 months after the date of the notification of compliance status listing the number of times the pressure drop or water flow rate for each dry filter or waterwash system, as applicable, was outside the limit(s) specified by the filter or booth manufacturer or in locally prepared operating procedures.

(d) *Depainting operation.* Each owner or operator of a depainting operation subject to this subpart shall submit the following information:

(1) Semiannual reports occurring every 6 months from the date of the notification of compliance status that identify:

(i) Any 24-hour period where organic HAP were emitted from the depainting of aerospace vehicles, other than from the exempt operations listed in § 63.746 (a), (b)(3), and (b)(5).

(ii) Any new chemical strippers used at the facility during the reporting period;

(iii) The organic HAP content of these new chemical strippers;

(iv) For each chemical stripper that undergoes reformulation, its organic HAP content;

(v) Any new non-chemical depainting technique in use at the facility since the notification of compliance status or any subsequent semiannual report was filed;

(vi) For periods of malfunctions:

(A) The non-chemical method or technique that malfunctioned;

(B) The date that the malfunction occurred;

(C) A description of the malfunction;

(D) The methods used to repaint aerospace vehicles during the malfunction period;

(E) The dates that these methods were begun and discontinued; and

(F) The date that the malfunction was corrected;

(vii) All periods where a non-chemical depainting operation subject to § 63.746 (b)(2) and (b)(4) for the control of inorganic HAP emissions was not

immediately shut down when the pressure drop or water flow rate was outside the limit(s) specified by the filter or booth manufacturer or in locally prepared operational procedures;

(viii) A list of new and discontinued aircraft models depainted at the facility over the last 6 months and a list of the parts normally removed for depainting for each new aircraft model being depainted; and

(ix) If the depainting operation has been in compliance for the semiannual period, a statement signed by a responsible company official that the operation was in compliance with the applicable standards.

(2) Annual reports occurring every 12 months from the date of the notification of compliance status that identify:

(i) The average volume per aircraft of organic HAP-containing chemical strippers used for spot stripping and decal removal operations if it exceeds the limits specified in § 63.746(b)(3); and

(ii) The number of times the pressure drop limit(s) for each filter system or the number of times the water flow rate limit(s) for each waterwash system were outside the limit(s) specified by the filter or booth manufacturer or in locally prepared operating procedures.

(3) Where a control device is used to control organic HAP emissions, semiannual reports that identify:

(i) If a carbon adsorber is used,

(A) each rolling period when the overall control efficiency of the control system is calculated to be less than 81% for existing systems or less than 95% for new systems, the initial material balance calculation, and any exceedances as demonstrated through the calculation; or,

(B) for nonregenerative carbon adsorbers, submit the design evaluation, the continuous monitoring system performance report, and any excess emissions as demonstrated through deviations of monitored values.

(ii) For control devices other than a carbon adsorber, each exceedance of the operating parameter(s) established for the control device under the initial performance test during which compliance was demonstrated;

(iii) Descriptions of any control devices currently in use that were not listed in the notification of compliance status or any subsequent report.

(e) *Chemical milling maskant application operation.* Each owner or operator of a chemical milling maskant application operation subject to this subpart shall submit semiannual reports occurring every 6 months from the date of the notification of compliance status that identify:

(1) For chemical milling maskants where compliance is not being achieved through the use of averaging or a control device, each value of  $H_i$  and  $G_i$ , as recorded under § 63.752(f)(1)(i), that exceeds the applicable organic HAP or VOC content limit specified in § 63.747(c);

(2) For chemical milling maskants where compliance is being achieved through the use of averaging, each value of  $H_a$  and  $G_a$ , as recorded under § 63.752(f)(2)(i), that exceeds the applicable organic HAP or VOC content limit specified in § 63.747(c);

(3) Where a control device is used,

(i) If incinerators are used to comply with the standards, all periods when the 3-hour average combustion temperature(s) is (are) less than the average combustion temperature(s) established under § 63.751(b) (11) or (12) during the most recent performance test during which compliance was demonstrated;

(ii) If a carbon adsorber is used,

(A) each rolling period when the overall control efficiency of the control system is calculated to be less than 81%, the initial material balance calculation, and any exceedances as demonstrated through the calculation; or,

(B) for nonregenerative carbon adsorbers, submit the design evaluation, the continuous monitoring system performance report, and any excess emissions as demonstrated through deviations of monitored values.

(iii) For control devices other than an incinerator or carbon adsorber, each exceedance of the operating parameter(s) established for the control device under the initial performance test during which compliance was demonstrated;

(4) All chemical milling maskants currently in use that were not listed in the notification of compliance status or any other subsequent semiannual report;

(5) Descriptions of any control devices currently in use that were not listed in the notification of compliance status or any subsequent report; and

(6) If the operations have been in compliance for the semiannual period, a statement that the chemical milling maskant application operation has been in compliance with the applicable standards.

[60 FR 45956, Sept. 1, 1996; 61 FR 4903, Feb. 9, 1996]

**§§ 63.754–63.759 [Reserved]**

**Subpart II—National Emission Standards for Shipbuilding and Ship Repair (Surface Coating)**

SOURCE: 60 FR 64336, Dec. 15, 1995, unless otherwise noted.

**§ 63.780 Relationship of subpart II to subpart A of this part.**

Table 1 of this subpart specifies the provisions of subpart A of this part that apply to owners and operators of sources subject to the provisions of this subpart.

**§ 63.781 Applicability.**

(a) The provisions of this subpart apply to shipbuilding and ship repair operations at any facility that is a major source.

(b) The provisions of this subpart do not apply to coatings used in volumes of less than 200 liters (52.8 gallons) per year, provided the total volume of coating exempt under this paragraph does not exceed 1,000 liters per year (264 gallons per year) at any facility. Coatings exempt under this paragraph shall be clearly labeled as “low-usage exempt,” and the volume of each such coating applied shall be maintained in the facility’s records.

(c) The provisions of this subpart do not apply to coatings applied with hand-held, nonrefillable, aerosol containers or to unsaturated polyester resin (i.e., fiberglass lay-up) coatings.

Coatings applied to suitably prepared fiberglass surfaces for protective or decorative purposes are subject to this subpart.

(d) The provisions in subpart A of this part pertaining to startups, shutdowns, and malfunctions and continuous monitoring do not apply to this source category unless an add-on control system is used to comply with this subpart in accordance with § 63.783(c).

**§ 63.782 Definitions.**

Terms used in this subpart are defined in the Clean Air Act (CAA), in subpart A of part 63, or in this section as follows:

*Add-on control system* means an air pollution control device such as a carbon absorber or incinerator that reduces pollution in an air stream by destruction or removal prior to discharge to the atmosphere.

*Affected source* means any shipbuilding or ship repair facility having surface coating operations with a minimum 1,000 liters (L) (264 gallons [gal]) annual marine coating usage that is subject to this subpart.

*Air flask specialty coating* means any special composition coating applied to interior surfaces of high pressure breathing air flasks to provide corrosion resistance and that is certified safe for use with breathing air supplies.

*Antenna specialty coating* means any coating applied to equipment through which electromagnetic signals must pass for reception or transmission.

*Antifoulant specialty coating* means any coating that is applied to the underwater portion of a vessel to prevent or reduce the attachment of biological organisms and that is registered with the EPA as a pesticide under the Federal Insecticide, Fungicide, and Rodenticide Act.

*As applied* means the condition of a coating at the time of application to the substrate, including any thinning solvent.

*As supplied* means the condition of a coating before any thinning, as sold and delivered by the coating manufacturer to the user.

*Batch* means the product of an individual production run of a coating manufacturer’s process. A batch may

vary in composition from other batches of the same product.

*Bitumens* mean black or brown materials that are soluble in carbon disulfide and consist mainly of hydrocarbons.

*Bituminous resin coating* means any coating that incorporates bitumens as a principal component and is formulated primarily to be applied to a substrate or surface to resist ultraviolet radiation and/or water.

*Certify* means, in reference to the volatile organic compounds (VOC) content or volatile organic hazardous air pollutants (VOHAP) content of a coating, to attest to the VOC content as determined through analysis by Method 24 of appendix A to 40 CFR part 60 or through use of forms and procedures outlined in appendix A of this subpart, or to attest to the VOHAP content as determined through an Administrator-approved test method. In the case of conflicting results, Method 24 of Appendix A to 40 CFR part 60 shall take precedence over the forms and procedures outlined in appendix A to this subpart for the options in which VOC is used as a surrogate for VOHAP.

*Coating* means any material that can be applied as a thin layer to a substrate and which cures to form a continuous solid film.

*Cold-weather time period* means any time during which the ambient temperature is below 4.5°C (40°F) and coating is to be applied.

*Container of coating* means the container from which the coating is applied, including but not limited to a bucket or pot.

*Cure volatiles* means reaction products which are emitted during the chemical reaction which takes place in some coating films at the cure temperature. These emissions are other than those from the solvents in the coating and may, in some cases, comprise a significant portion of total VOC and/or VOHAP emissions.

*Epoxy* means any thermoset coating formed by reaction of an epoxy resin (i.e., a resin containing a reactive epoxide with a curing agent).

*Exempt compounds* means specified organic compounds that are not considered VOC due to negligible photo-

chemical reactivity. Exempt compounds are specified in 40 CFR 51.100(s).

*Facility* means all contiguous or adjoining property that is under common ownership or control, including properties that are separated only by a road or other public right-of-way.

*General use coating* means any coating that is not a specialty coating.

*Hazardous air pollutants (HAP)* means any air pollutant listed in or pursuant to section 112(b) of the CAA.

*Heat resistant specialty coating* means any coating that during normal use must withstand a temperature of at least 204°C (400°F).

*High-gloss specialty coating* means any coating that achieves at least 85 percent reflectance on a 60 degree meter when tested by ASTM Method D523 (incorporation by reference—see § 63.14).

*High-temperature specialty coating* means any coating that during normal use must withstand a temperature of at least 426°C (800°F).

*Inorganic zinc (high-build) specialty coating* means a coating that contains 960 grams per liter (8 pounds per gallon) or more elemental zinc incorporated into an inorganic silicate binder that is applied to steel to provide galvanic corrosion resistance. (These coatings are typically applied at more than 2 mil dry film thickness.)

*Major source* means any source that emits or has the potential to emit, in the aggregate, 9.1 megagrams per year (10 tons per year) or more of any HAP or 22.7 megagrams per year (25 tons per year) or more of any combination of HAP.

*Maximum allowable thinning ratio* means the maximum volume of thinner that can be added per volume of coating without violating the standards of § 63.783(a), as determined using Equation 1 of this subpart.

*Military exterior specialty coating* or Chemical Agent Resistant Coatings ("CARC") means any exterior topcoat applied to military or U.S. Coast Guard vessels that are subject to specific chemical, biological, and radiological washdown requirements.

*Mist specialty coating* means any low viscosity, thin film, epoxy coating applied to an inorganic zinc primer that penetrates the porous zinc primer and

allows the occluded air to escape through the paint film prior to curing.

*Navigational aids specialty coating* means any coating applied to Coast Guard buoys or other Coast Guard waterway markers when they are re-coated aboard ship at their usage site and immediately returned to the water.

*Nonskid specialty coating* means any coating applied to the horizontal surfaces of a marine vessel for the specific purpose of providing slip resistance for personnel, vehicles, or aircraft.

*Nonvolatiles (or volume solids)* means substances that do not evaporate readily. This term refers to the film-forming material of a coating.

*Normally closed* means a container or piping system is closed unless an operator is actively engaged in adding or removing material.

*Nuclear specialty coating* means any protective coating used to seal porous surfaces such as steel (or concrete) that otherwise would be subject to intrusion by radioactive materials. These coatings must be resistant to long-term (service life) cumulative radiation exposure (ASTM D4082-89 [incorporation by reference—see § 63.14]), relatively easy to decontaminate (ASTM D4256-89 [reapproved 1994] [incorporation by reference—see § 63.14]), and resistant to various chemicals to which the coatings are likely to be exposed (ASTM D3912-80 [incorporation by reference—see § 63.14]). [For nuclear coatings, see the general protective requirements outlined by the U.S. Nuclear Regulatory Commission in a report entitled “U.S. Atomic Energy Commission Regulatory Guide 1.54” dated June 1973, available through the Government Printing Office at (202) 512-2249 as document number A74062-00001.]

*Operating parameter value* means a minimum or maximum value established for a control device or process parameter that, if achieved by itself or in combination with one or more other operating parameter values, determines that an owner or operator has complied with an applicable emission limitation or standard.

*Organic zinc specialty coating* means any coating derived from zinc dust incorporated into an organic binder that

contains more than 960 grams of elemental zinc per liter (8 pounds per gallon) of coating, as applied, and that is used for the expressed purpose of corrosion protection.

*Pleasure craft* means any marine or fresh-water vessel used by individuals for noncommercial, nonmilitary, and recreational purposes that is less than 20 meters in length. A vessel rented exclusively to or chartered by individuals for such purposes shall be considered a pleasure craft.

*Pretreatment wash primer specialty coating* means any coating that contains a minimum of 0.5 percent acid, by mass, and is applied only to bare metal to etch the surface and enhance adhesion of subsequent coatings.

*Repair and maintenance of thermoplastic coating of commercial vessels (specialty coating)* means any vinyl, chlorinated rubber, or bituminous resin coating that is applied over the same type of existing coating to perform the partial recoating of any in-use commercial vessel. (This definition does not include coal tar epoxy coatings, which are considered “general use” coatings.)

*Rubber camouflage specialty coating* means any specially formulated epoxy coating used as a camouflage topcoat for exterior submarine hulls and sonar domes.

*Sealant for thermal spray aluminum* means any epoxy coating applied to thermal spray aluminum surfaces at a maximum thickness of 1 dry mil.

*Ship* means any marine or fresh-water vessel used for military or commercial operations, including self-propelled vessels, those propelled by other craft (barges), and navigational aids (buoys). This definition includes, but is not limited to, all military and Coast Guard vessels, commercial cargo and passenger (cruise) ships, ferries, barges, tankers, container ships, patrol and pilot boats, and dredges. For purposes of this subpart, pleasure crafts and offshore oil and gas drilling platforms are not considered ships.

*Shipbuilding and ship repair operations* means any building, repair, repainting, converting, or alteration of ships.

*Special marking specialty coating* means any coating that is used for safety or identification applications,

such as markings on flight decks and ships' numbers.

*Specialty coating* means any coating that is manufactured and used for one of the specialized applications described within this list of definitions.

*Specialty interior coating* means any coating used on interior surfaces aboard U.S. military vessels pursuant to a coating specification that requires the coating to meet specified fire retardant and low toxicity requirements, in addition to the other applicable military physical and performance requirements.

*Tack specialty coating* means any thin film epoxy coating applied at a maximum thickness of 2 dry mils to prepare an epoxy coating that has dried beyond the time limit specified by the manufacturer for the application of the next coat.

*Thinner* means a liquid that is used to reduce the viscosity of a coating and that evaporates before or during the cure of a film.

*Thinning ratio* means the volumetric ratio of thinner to coating, as supplied.

*Thinning solvent*: see Thinner.

*Undersea weapons systems specialty coating* means any coating applied to any component of a weapons system intended to be launched or fired from under the sea.

*Volatile organic compounds (VOC)* is as defined in §51.100(s) of this chapter.

*Volatile organic hazardous air pollutants (VOHAP)* means any compound listed in or pursuant to section 112(b) of the CAA that contains carbon, excluding metallic carbides and carbonates. This definition includes VOC listed as HAP and exempt compounds listed as HAP.

*Weld-through preconstruction primer (specialty coating)* means a coating that provides corrosion protection for steel during inventory, is typically applied at less than 1 mil dry film thickness, does not require removal prior to welding, is temperature resistant (burn back from a weld is less than 1.25 centimeters [0.5 inch]), and does not normally require removal before applying film-building coatings, including inorganic zinc high-build coatings. When constructing new vessels, there may be a need to remove areas of weld-through preconstruction primer due to surface

damage or contamination prior to application of film-building coatings.

#### § 63.783 Standards.

(a) No owner or operator of any existing or new affected source shall cause or allow the application of any coating to a ship with an as-applied VOHAP content exceeding the applicable limit given in Table 2 of this subpart, as determined by the procedures described in §63.785 (c)(1) through (c)(4). For the compliance procedures described in §63.785 (c)(1) through (c)(3), VOC shall be used as a surrogate for VOHAP, and Method 24 of Appendix A to 40 CFR part 60 shall be used as the definitive measure for determining compliance. For the compliance procedure described in §63.785(c)(4), an alternative test method capable of measuring independent VOHAP shall be used to determine compliance. The method must be submitted to and approved by the Administrator.

(b) Each owner or operator of a new or existing affected source shall ensure that:

(1) All handling and transfer of VOHAP-containing materials to and from containers, tanks, vats, drums, and piping systems is conducted in a manner that minimizes spills.

(2) All containers, tanks, vats, drums, and piping systems are free of cracks, holes, and other defects and remain closed unless materials are being added to or removed from them.

(c) *Approval of alternative means of limiting emissions.* (1) The owner or operator of an affected source may apply to the Administrator for permission to use an alternative means (such as an add-on control system) of limiting emissions from coating operations. The application must include:

(i) An engineering material balance evaluation that provides a comparison of the emissions that would be achieved using the alternative means to those that would result from using coatings that comply with the limits in Table 2 of this subpart, or the results from an emission test that accurately measures the capture efficiency and control device efficiency achieved by the control system and the composition of the associated coatings so that the emissions comparison can be made;

(ii) A proposed monitoring protocol that includes operating parameter values to be monitored for compliance and an explanation of how the operating parameter values will be established through a performance test; and

(iii) Details of appropriate record-keeping and reporting procedures.

(2) The Administrator shall approve the alternative means of limiting emissions if, in the Administrator's judgment, postcontrol emissions of VOHAP per volume applied solids will be no greater than those from the use of coatings that comply with the limits in Table 2 of this subpart.

(3) The Administrator may condition approval on operation, maintenance, and monitoring requirements to ensure that emissions from the source are no greater than those that would otherwise result from this subpart.

**§ 63.784 Compliance dates.**

(a) Each owner or operator of an existing affected source shall comply within two years after the effective date of this subpart.

(b) Each owner or operator of an existing unaffected area source that increases its emissions of (or its potential to emit) HAP such that the source becomes a major source that is subject to this subpart shall comply within 1 year after the date of becoming a major source.

(c) Each owner or operator of a new or reconstructed source shall comply with this subpart according to the schedule in § 63.6(b).

[60 FR 64336, Dec. 15, 1995, as amended at 61 FR 30816, June 18, 1996]

EFFECTIVE DATE NOTE: At 61 FR 30816, June 18, 1996, in § 63.784, paragraph (a) was revised, effective Aug. 19, 1996. For the convenience of the user, the superseded text is set forth as follows.

**§ 63.784 Compliance dates.**

(a) Each owner or operator of an existing affected source shall comply within 1 year after the effective date of this subpart.

\* \* \* \* \*

**§ 63.785 Compliance procedures.**

(a) For each batch of coating that is received by an affected source, the owner or operator shall (see Figure 1 of

this section for a flow diagram of the compliance procedures):

(1) Determine the coating category and the applicable VOHAP limit as specified in § 63.783(a).

(2) Certify the as-supplied VOC content of the batch of coating. The owner or operator may use a certification supplied by the manufacturer for the batch, although the owner or operator retains liability should subsequent testing reveal a violation. If the owner or operator performs the certification testing, only one of the containers in which the batch of coating was received is required to be tested.

(b)(1) In lieu of testing each batch of coating, as applied, the owner or operator may determine compliance with the VOHAP limits using any combination of the procedures described in paragraphs (c)(1), (c)(2), (c)(3), and (c)(4) of this section. The procedure used for each coating shall be determined and documented prior to application.

(2) The results of any compliance demonstration conducted by the affected source or any regulatory agency using Method 24 shall take precedence over the results using the procedures in paragraphs (c)(1), (c)(2), or (c)(3) of this section.

(3) The results of any compliance demonstration conducted by the affected source or any regulatory agency using an approved test method to determine VOHAP content shall take precedence over the results using the procedures in paragraph (c)(4) of this section.

(c)(1) *Coatings to which thinning solvent will not be added.* For coatings to which thinning solvent (or any other material) will not be added under any circumstance or to which only water is added, the owner or operator of an affected source shall comply as follows:

(i) Certify the as-applied VOC content of each batch of coating.

(ii) Notify the persons responsible for applying the coating that no thinning solvent may be added to the coating by affixing a label to each container of coating in the batch or through another means described in the implementation plan required in § 63.787(b).

(iii) If the certified as-applied VOC content of each batch of coating used during a calendar month is less than or

equal to the applicable VOHAP limit in §63.783(a) (either in terms of g/L of coating or g/L of solids), then compliance is demonstrated for that calendar month, unless a violation is revealed using Method 24 of Appendix A to 40 CFR part 60.

(2) *Coatings to which thinning solvent will be added—coating-by-coating compliance.* For a coating to which thinning solvent is routinely or sometimes added, the owner or operator shall comply as follows:

(i) Prior to the first application of each batch, designate a single thinner for the coating and calculate the maximum allowable thinning ratio (or ratios, if the affected source complies with the cold-weather limits in addition to the other limits specified in Table 2 of this subpart) for each batch as follows:

$$R = \frac{(V_s)(\text{VOHAP limit}) - m_{\text{VOC}}}{D_{\text{th}}} \quad \text{Eqn. 1}$$

where:

R=Maximum allowable thinning ratio for a given batch (L thinner/L coating as supplied);

V<sub>s</sub>=Volume fraction of solids in the batch as supplied (L solids/L coating as supplied);

VOHAP limit=Maximum allowable as-applied VOHAP content of the coating (g VOHAP/L solids);

m<sub>VOC</sub>=VOC content of the batch as supplied [g VOC (including cure volatiles and exempt compounds on the HAP list)/L coating (including water and exempt compounds) as supplied];

$$V_{\text{th}} = \sum_{i=1}^n (R \times V_{\text{b}})_i + \sum_{i=1}^n (R_{\text{cold}} \times V_{\text{b-cold}})_i \quad \text{Eqn. 3}$$

where:

V<sub>th</sub>=Total allowable volume of thinner for the previous month (L thinner);

V<sub>b</sub>=Volume of each batch, as supplied and before being thinned, used during non-cold-weather days of the previous month (L coating as supplied);

D<sub>th</sub>=Density of the thinner (g/L).

If V<sub>s</sub> is not supplied directly by the coating manufacturer, the owner or operator shall determine V<sub>s</sub> as follows:

$$V_s = 1 - \frac{m_{\text{volatiles}}}{D_{\text{avg}}} \quad \text{Eqn. 2}$$

where:

m<sub>volatiles</sub>=Total volatiles in the batch, including VOC, water, and exempt compounds (g/L coating); and

D<sub>avg</sub>=Average density of volatiles in the batch (g/L).

The procedures specified in §63.786(d) may be used to determine the values of variables defined in this paragraph. In addition, the owner or operator may choose to construct nomographs, based on Equation 1 of this subpart, similar or identical to the one provided in appendix B of this subpart as a means of easily estimating the maximum allowable thinning ratio.

(ii) Prior to the first application of each batch, notify painters and other persons, as necessary, of the designated thinner and maximum allowable thinning ratio(s) for each batch of the coating by affixing a label to each container of coating or through another means described in the implementation plan required in §63.787(b).

(iii) By the 15th day of each calendar month, determine the volume of each batch of the coating used, as supplied, during the previous month.

(iv) By the 15th day of each calendar month, determine the total allowable volume of thinner for the coating used during the previous month as follows:

R<sub>cold</sub>=Maximum allowable thinning ratio for each batch used during cold-weather days (L thinner/L coating as supplied);

V<sub>b-cold</sub>=Volume of each batch, as supplied and before being thinned, used during cold-weather days of the previous month (L coating as supplied);

i=Each batch of coating; and

n=Total number of batches of the coating.

(v) By the 15th day of each calendar month, determine the volume of thinner actually used with the coating during the previous month.

(vi) If the volume of thinner actually used with the coating [paragraph (c)(3)(v) of this section] is less than or equal to the total allowable volume of thinner for the coating [paragraph (c)(3)(iv) of this section], then compliance is demonstrated for the coating for the previous month, unless a violation is revealed using Method 24 of Appendix A to 40 CFR part 60.

(3) *Coatings to which the same thinning solvent will be added—group compliance.* For coatings to which the same thinning solvent (or other material) is routinely or sometimes added, the owner or operator shall comply as follows:

(i) Designate a single thinner to be added to each coating during the month and “group” coatings according to their designated thinner.

(ii) Prior to the first application of each batch, calculate the maximum allowable thinning ratio (or ratios, if the affected source complies with the cold-weather limits in addition to the other limits specified in Table 2 of this subpart) for each batch of coating in the group using the equations in paragraph (c)(2) of this section.

(iii) Prior to the first application of each “batch,” notify painters and other persons, as necessary, of the designated thinner and maximum allowable thinning ratio(s) for each batch in the group by affixing a label to each container of coating or through another means described in the implementation plan required in § 63.787(b).

(iv) By the 15th day of each calendar month, determine the volume of each batch of the group used, as supplied, during the previous month.

(v) By the 15th day of each calendar month, determine the total allowable volume of thinner for the group for the previous month using Equation 3 of this subpart.

(vi) By the 15th day of each calendar month, determine the volume of thinner actually used with the group during the previous month.

(vii) If the volume of thinner actually used with the group [paragraph (c)(3)(vi) of this section] is less than or equal to the total allowable volume of thinner for the group [paragraph (c)(3)(v) of this section], then compliance is demonstrated for the group for the previous month, unless a violation is revealed using Method 24 of Appendix A to 40 CFR part 60.

(4) *Demonstration of compliance through an alternative (i.e., other than Method 24 of Appendix A to 40 CFR part 60) test method.* The owner or operator shall comply as follows:

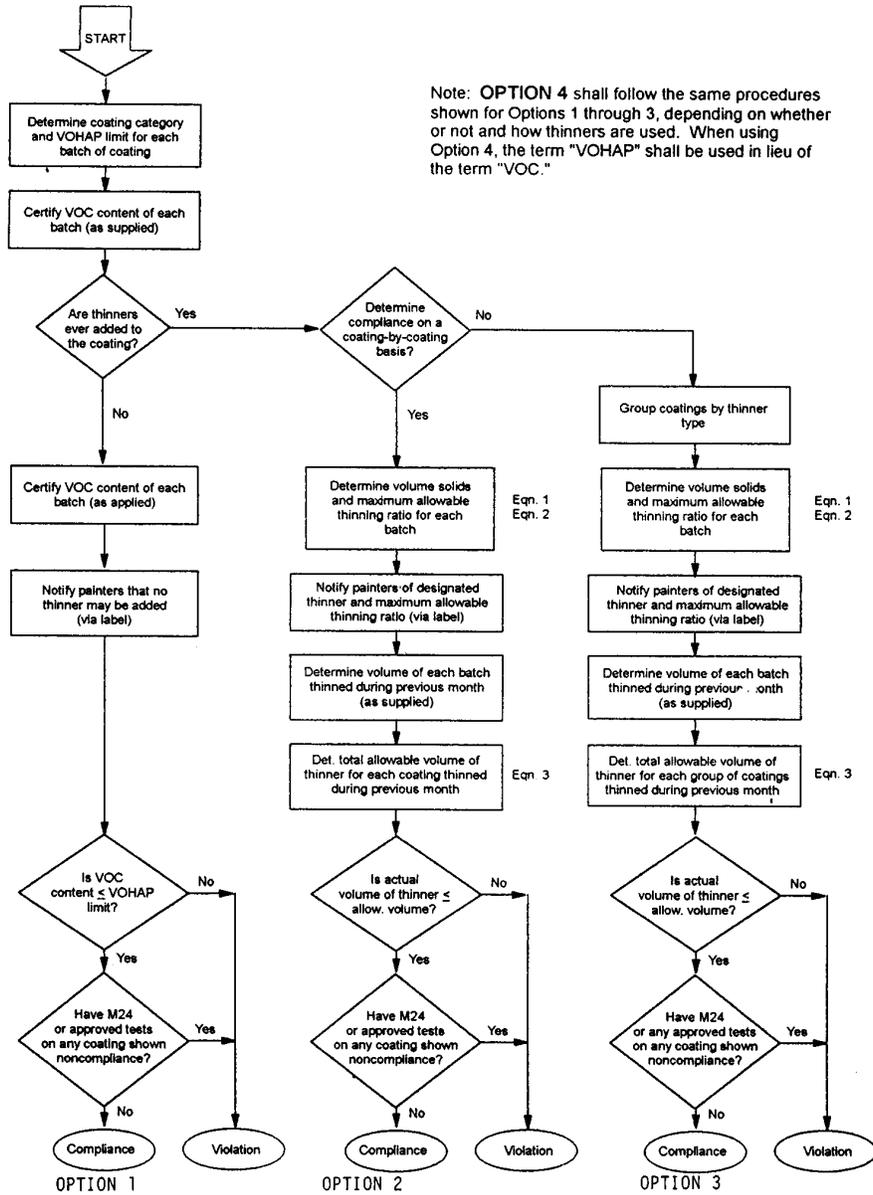
(i) Certify the as-supplied VOHAP content (g VOHAP/L solids) of each batch of coating.

(ii) If no thinning solvent will be added to the coating, the owner or operator of an affected source shall follow the procedure described in § 63.785(c)(1), except that VOHAP content shall be used in lieu of VOC content.

(iii) If thinning solvent will be added to the coating, the owner or operator of an affected source shall follow the procedure described in § 63.785(c)(2) or (3), except that in Equation 1 of this subpart: the term “ $m_{VOC}$ ” shall be replaced by the term “ $m_{VOHAP}$ ,” defined as the VOHAP content of the coating as supplied (g VOHAP/L coating) and the term “ $D_{th}$ ” shall be replaced by the term “ $D_{th(VOHAP)}$ ” defined as the average density of the VOHAP thinner(s) (g/L).

(d) A violation revealed through any approved test method shall result in a 1-day violation for enforcement purposes. A violation revealed through the recordkeeping procedures described in paragraphs (c)(1) through (c)(4) of this section shall result in a 30-day violation for enforcement purposes, unless the owner or operator provides sufficient data to demonstrate the specific days during which noncompliant coatings were applied.

Figure 1 to §63.785 Flow diagram of compliance procedures



**§ 63.786 Test methods and procedures.**

(a) For the compliance procedures described in § 63.785(c) (1) through (c)(3), Method 24 of 40 CFR part 60, appendix A, is the definitive method for determining the VOC content of coatings, as supplied or as applied. When a coating or thinner contains exempt compounds that are volatile HAP or VOHAP, the owner or operator shall ensure, when determining the VOC content of a coating, that the mass of these exempt compounds is included.

(b) For the compliance procedure described in § 63.785(c)(4), the Administrator must approve the test method for determining the VOHAP content of coatings and thinners. As part of the approval, the test method must meet the specified accuracy limits indicated below for sensitivity, duplicates, repeatability, and reproducibility coefficient of variation each determined at the 95 percent confidence limit. Each percentage value below is the corresponding coefficient of variation multiplied by 2.8 as in the ASTM Method E180-93: Standard Practice for Determining the Precision of ASTM Methods for Analysis and Testing of Industrial Chemicals (incorporation by reference—see § 63.14).

(1) *Sensitivity.* The overall sensitivity must be sufficient to identify and calculate at least one mass percent of the compounds of interest based on the original sample. The sensitivity is defined as ten times the noise level as specified in ASTM Method D3257-93: Standard Test Methods for Aromatics in Mineral Spirits by Gas Chromatography (incorporation by reference—see § 63.14). In determining the sensitivity, the level of sample dilution must be factored in.

(2) *Repeatability.* First, at the 0.1-5 percent analyte range the results would be suspect if duplicates vary by more than 6 percent relative and/or day to day variation of mean duplicates by the same analyst exceeds 10 percent relative. Second, at greater than 5 percent analyte range the results would be suspect if duplicates vary by more than 5 percent relative and/or day to day variation of duplicates by the same analyst exceeds 5 percent relative.

(3) *Reproducibility.* First, at the 0.1-5 percent analyte range the results

would be suspect if lab to lab variation exceeds 60 percent relative. Second, at greater than 5 percent range the results would be suspect if lab to lab variation exceeds 20 percent relative.

(4) Any test method should include information on the apparatus, reagents and materials, analytical procedure, procedure for identification and confirmation of the volatile species in the mixture being analyzed, precision and bias, and other details to be reported. The reporting should also include information on quality assurance (QA) auditing.

(5) Multiple and different analytical techniques must be used for positive identification if the components in a mixture under analysis are not known. In such cases a single column gas chromatograph (GC) may not be adequate. A combination of equipment may be needed such as a GC/mass spectrometer or GC/infrared system. (If a GC method is used, the operator must use practices in ASTM Method E260-91: Standard Practice for Gas Chromatography [incorporation by reference—see § 63.14].)

(c) A coating manufacturer or the owner or operator of an affected source may use batch formulation data as a test method in lieu of Method 24 of Appendix A to 40 CFR part 60 to certify the as-supplied VOC content of a coating if the manufacturer or the owner or operator has determined that batch formulation data have a consistent and quantitatively known relationship to Method 24 results. This determination shall consider the role of cure volatiles, which may cause emissions to exceed an amount based solely upon coating formulation data. Notwithstanding such determination, in the event of conflicting results, Method 24 of appendix A of 40 CFR part 60 shall take precedence.

(d) Each owner or operator of an affected source shall use or ensure that the manufacturer uses the form and procedures mentioned in appendix A of this subpart to determine values for the thinner and coating parameters used in Equations 1 and 2 of this subpart. The owner or operator shall ensure that the coating/thinner manufacturer (or supplier) provides information on the VOC and VOHAP contents of the

coatings/thinners and the procedure(s) used to determine these values.

**§ 63.787 Notification requirements.**

(a) Each owner or operator of an affected source shall comply with all applicable notification requirements in § 63.9(a) through (d) and (i) through (j), with the exception that the deadline specified in § 63.9(b) (2) and (3) shall be extended from 120 days to 180 days. Any owner or operator that receives approval pursuant to § 63.783(c) to use an add-on control system to control coating emissions shall comply with the applicable requirements of § 63.9(e) through (h).

(b) *Implementation plan.* The provisions of § 63.9(a) apply to the requirements of this paragraph.

(1) Each owner or operator of an affected source shall:

(i) Prepare a written implementation plan that addresses each of the subject areas specified in paragraph (b)(3) of this section; and

(ii) Not later than one year after the effective date of this subpart, submit the implementation plan to the Administrator along with the notification required by § 63.9(b)(2) or (b)(5) of subpart A, as applicable.

(2) The Administrator may require revisions to the initial plan where the Administrator finds that the plan does not adequately address each subject area listed in paragraph (b)(3) of this section or that the requirements in the plan are unclear.

(3) *Implementation plan contents.* Each implementation plan shall address the following subject areas:

(i) *Coating compliance procedures.* The implementation plan shall include the compliance procedure(s) under § 63.785(c) that the source intends to use.

(ii) *Recordkeeping procedures.* The implementation plan shall include the procedures for maintaining the records required under § 63.788, including the procedures for gathering the necessary data and making the necessary calculations.

(iii) *Transfer, handling, and storage procedures.* The implementation plan shall include the procedures for ensuring compliance with § 63.783(b).

(4) *Major sources that intend to become area sources by the compliance date.* Existing major sources that intend to become area sources by the December 16, 1997 compliance date may choose to submit, in lieu of the implementation plan required under paragraph (b)(1) of this section, a statement that, by the compliance date, the major source intends to obtain and comply with federally enforceable limits on their potential to emit which make the facility an area source.

[60 FR 64336, Dec. 15, 1995, as amended at 61 FR 30816, June 18, 1996]

EFFECTIVE DATE NOTE: At 61 FR 30816, June 18, 1996, in § 63.787, paragraphs (b)(1)(ii) and (b)(4) were revised, and paragraph (b)(2) was removed and reserved, effective Aug. 19, 1996. For the convenience of the user, the superseded text is set forth as follows.

**§ 63.787 Notification requirements.**

\* \* \* \* \*

(b)

(1)

(ii) Not later than 180 days after the effective date of this subpart, submit the implementation plan to the Administrator for approval along with the notification required by § 63.9(b) (2) or (5), as applicable.

\* \* \* \* \*

(4) *Major sources that intend to become area sources by the compliance date.* Existing major sources that intend to become area sources by the compliance date December 16, 1996 may choose to submit, in lieu of the implementation plan required under paragraph (b)(1) of this section, a statement that, by the compliance date, the major source intends to obtain and comply with federally enforceable limits on their potential to emit which make the facility an area source.

**§ 63.788 Recordkeeping and reporting requirements.**

(a) Each owner or operator of an affected source shall comply with the applicable recordkeeping and reporting requirements in § 63.10 (a), (b), (d), and (f). Any owner that receives approval pursuant to § 63.783(c) to use an add-on control system to control coating emissions shall also comply with the applicable requirements of § 63.10 (c) and (e). A summary of recordkeeping and reporting requirements is provided in Table 3 of this subpart.

(b) *Recordkeeping requirements.* (1) Each owner or operator of an unaffected major source, as described in §63.781(b), shall record the total volume of coating applied at the source to ships. Such records shall be compiled monthly and maintained for a minimum of 5 years.

(2) Each owner or operator of an affected source shall compile records on a monthly basis and maintain those records for a minimum of 5 years. At a minimum, these records shall include:

(i) All documentation supporting initial notification;

(ii) A copy of the affected source's approved implementation plan;

(iii) The volume of each low-usage-exempt coating applied;

(iv) Identification of the coatings used, their appropriate coating categories, and the applicable VOHAP limit;

(v) Certification of the as-supplied VOC content of each batch of coating;

(vi) A determination of whether containers meet the standards as described in §63.783(b)(2); and

(vii) The results of any Method 24 of appendix A to 40 CFR part 60 or approved VOHAP measurement test conducted on individual containers of coating, as applied.

(3) The records required by paragraph (b)(2) of this section shall include additional information, as determined by the compliance procedure(s) described in §63.785(c) that each affected source followed:

(i) *Coatings to which thinning solvent will not be added.* The records maintained by facilities demonstrating compliance using the procedure described in §63.785(c)(1) shall contain the following information:

(A) Certification of the as-applied VOC content of each batch of coating; and

(B) The volume of each coating applied.

(ii) *Coatings to which thinning solvent will be added—coating-by-coating compliance.* The records maintained by facilities demonstrating compliance using the procedure described in §63.785(c)(2) shall contain the following information:

(A) The density and mass fraction of water and exempt compounds of each

thinner and the volume fraction of solids (nonvolatiles) in each batch, including any calculations;

(B) The maximum allowable thinning ratio (or ratios, if the affected source complies with the cold-weather limits in addition to the other limits specified in Table 2 of this subpart) for each batch of coating, including calculations;

(C) If an affected source chooses to comply with the cold-weather limits, the dates and times during which the ambient temperature at the affected source was below 4.5°C (40°F) at the time the coating was applied and the volume used of each batch of the coating, as supplied, during these dates;

(D) The volume used of each batch of the coating, as supplied;

(E) The total allowable volume of thinner for each coating, including calculations; and

(F) The actual volume of thinner used for each coating.

(iii) *Coatings to which the same thinning solvent will be added—group compliance.* The records maintained by facilities demonstrating compliance using the procedure described in §63.785(c)(3) shall contain the following information:

(A) The density and mass fraction of water and exempt compounds of each thinner and the volume fraction of solids in each batch, including any calculations;

(B) The maximum allowable thinning ratio (or ratios, if the affected source complies with the cold-weather limits in addition to the other limits specified in Table 2 of this subpart) for each batch of coating, including calculations;

(C) If an affected source chooses to comply with the cold-weather limits, the dates and times during which the ambient temperature at the affected source was below 4.5°C (40°F) at the time the coating was applied and the volume used of each batch in the group, as supplied, during these dates;

(D) Identification of each group of coatings and their designated thinners;

(E) The volume used of each batch of coating in the group, as supplied;

(F) The total allowable volume of thinner for the group, including calculations; and

(G) The actual volume of thinner used for the group.

(iv) *Demonstration of compliance through an alternative (i.e., non-Method 24 in appendix A to 40 CFR part 60) test method.* The records maintained by facilities demonstrating compliance using the procedure described in § 63.785(c)(4) shall contain the following information:

(A) Identification of the Administrator-approved VOHAP test method or certification procedure;

(B) For coatings to which the affected source does not add thinning solvents, the source shall record the certification of the as-supplied and as-applied VOHAP content of each batch and the volume of each coating applied;

(C) For coatings to which the affected source adds thinning solvent on a coating-by-coating basis, the source shall record all of the information required to be recorded by paragraph (b)(3)(ii) of this section; and

(D) For coatings to which the affected source adds thinning solvent on a group basis, the source shall record all of the information required to be recorded by paragraph (b)(3)(iii) of this section.

(4) If the owner or operator of an affected source detects a violation of the standards specified in § 63.783, the owner or operator shall, for the remainder of the reporting period during which the violation(s) occurred, include the following information in his or her records:

(i) A summary of the number and duration of deviations during the reporting period, classified by reason, including known causes for which a Federally-approved or promulgated exemption from an emission limitation or standard may apply.

(ii) Identification of the data availability achieved during the reporting period, including a summary of the number and total duration of incidents that the monitoring protocol failed to perform in accordance with the design of the protocol or produced data that

did not meet minimum data accuracy and precision requirements, classified by reason.

(iii) Identification of the compliance status as of the last day of the reporting period and whether compliance was continuous or intermittent during the reporting period.

(iv) If, pursuant to paragraph (b)(4)(iii) of this section, the owner or operator identifies any deviation as resulting from a known cause for which no Federally-approved or promulgated exemption from an emission limitation or standard applies, the monitoring report shall also include all records that the source is required to maintain that pertain to the periods during which such deviation occurred and:

(A) The magnitude of each deviation;

(B) The reason for each deviation;

(C) A description of the corrective action taken for each deviation, including action taken to minimize each deviation and action taken to prevent recurrence; and

(D) All quality assurance activities performed on any element of the monitoring protocol.

(c) *Reporting requirements.* Before the 60th day following completion of each 6-month period after the compliance date specified in § 63.784, each owner or operator of an affected source shall submit a report to the Administrator for each of the previous 6 months. The report shall include all of the information that must be retained pursuant to paragraphs (b) (2) through (3) of this section, except for that information specified in paragraphs (b)(2) (i) through (ii), (b)(2)(v), (b)(3)(i)(A), (b)(3)(ii)(A), and (b)(3)(iii)(A). If a violation at an affected source is detected, the source shall also report the information specified in paragraph (b)(4) of this section for the reporting period during which the violation(s) occurred. To the extent possible, the report shall be organized according to the compliance procedure(s) followed each month by the affected source.

TABLE 1 TO SUBPART II OF PART 63—GENERAL PROVISIONS OF APPLICABILITY TO SUBPART II

| Reference           | Applies to subpart II | Comment |
|---------------------|-----------------------|---------|
| 63.1(a)(1)–(3) .... | Yes. ....             |         |

TABLE 1 TO SUBPART II OF PART 63—GENERAL PROVISIONS OF APPLICABILITY TO SUBPART II—  
Continued

| Reference             | Applies to subpart II | Comment   |
|-----------------------|-----------------------|---|
| 63.1(a)(4) .....      | Yes .....             | Subpart II clarifies the applicability of each paragraph in subpart A to sources subject to subpart II.   |
| 63.1(a)(5)–(7) ....   | Yes.                  |   |
| 63.1(a)(8) .....      | No .....              | Discusses State programs.   |
| 63.1(a)(9)–(14) ..... | Yes.                  |   |
| 63.1(b)(1) .....      | Yes .....             | § 63.781 specifies applicability in more detail.  |
| 63.1(b)(2)–(3) ....   | Yes.                  |   |
| 63.1(c)–(e) .....     | Yes.                  |   |
| 63.2 .....            | Yes .....             | Additional terms are defined in § 63.782; when overlap between subparts A and II occurs, subpart II takes precedence.   |
| 63.3 .....            | Yes .....             | Other units used in subpart II are defined in that subpart.   |
| 63.4 .....            | Yes.                  |   |
| 63.5(a)–(c) .....     | Yes.                  |   |
| 63.5(d) .....         | Yes .....             | Except information on control devices and control efficiencies should not be included in the application unless an add-on control system is or will be used to comply with subpart II in accordance with § 63.783(c). |
| 63.5(e)–(f) .....     | Yes.                  |   |
| 63.6(a)–(b) .....     | Yes.                  |   |
| 63.6(c)–(d) .....     | Yes .....             | Except § 63.784(a) specifies the compliance date for existing affected sources.   |
| 63.6(e)–(f) .....     | No .....              | If an alternative means of limiting emissions (e.g., an add-on control system) is used to comply with subpart II in accordance with § 63.783(c), then these paragraphs do apply.                                      |
| 63.6(g) .....         | No .....              | § 63.783(c) specifies procedures for application and approval of alternative means of limiting emissions.   |
| 63.6(h) .....         | No .....              | Subpart II does not contain any opacity or visible emission standards.  |
| 63.6(i)–(j) .....     | Yes.                  |   |
| 63.7 .....            | No .....              | If an alternative means of limiting emissions (e.g., an add-on control system) is used to comply with subpart II in accordance with § 63.783(c), then this section does apply.  |
| 63.8 .....            | No .....              | If an alternative means of limiting emissions (e.g., an add-on control system) is used to comply with subpart II in accordance with § 63.783(c), then this section does apply.  |
| 63.9(a)–(d) .....     | Yes .....             | § 63.787(a) extends the initial notification deadline to 180 days. § 63.787(b) requires an implementation plan to be submitted with the initial notification.   |
| 63.9(e) .....         | No .....              | If an alternative means of limiting emissions (e.g., an add-on control system) is used to comply with subpart II in accordance with § 63.783(c), then this paragraph does apply.                                      |
| 63.9(f) .....         | No .....              | Subpart II does not contain any opacity or visible emission standards   |
| 63.9(g)–(h) .....     | No .....              | If an alternative means of limiting emissions (e.g., an add-on control system) is used to comply with subpart II in accordance with § 63.783(c) then these paragraphs do apply.                                       |
| 63.9(i)–(j) .....     | Yes.                  |   |
| 63.10(a)–(b) .....    | Yes .....             | § 63.788(b)–(c) list additional recordkeeping and reporting requirements.   |
| 63.10(c) .....        | No .....              | If an alternative means of limiting emissions (e.g., an add-on control system) is used to comply with subpart II in accordance with § 63.783(c), then this paragraph does apply.                                      |
| 63.10(d) .....        | Yes.                  |   |
| 63.10(e) .....        | No .....              | If an alternative means of limiting emissions (e.g., an add-on control system) is used to comply with subpart II in accordance with § 63.783(c), then this paragraph does apply.                                      |
| 63.10(f) .....        | Yes.                  |   |
| 63.11 .....           | No .....              | If an alternative means of limiting emissions (e.g., an add-on control system) is used to comply with subpart II in accordance with § 63.783(c), then this section does apply.  |
| 63.12–63.15 .....     | Yes.                  |   |

TABLE 2 TO SUBPART II OF PART 63.—VOLATILE ORGANIC HAP (VOHAP) LIMITS FOR MARINE COATINGS

| Coating category                | VOHAP limits <sup>a b c</sup>                          |                                 |                         |
|---------------------------------|--|---------------------------------|-------------------------|
|                                 | Grams/liter coating (minus water and exempt compounds) | Grams/liter solids <sup>d</sup> |                         |
|                                 |  | t ≥ 4.5° C                      | t < 4.5° C <sup>e</sup> |
| General use .....               | 340  | 571                             | 728                     |
| Specialty:                      |  |                                 |                         |
| Air flask .....                 | 340  | 571                             | 728                     |
| Antenna .....                   | 530  | 1,439                           |                         |
| Antifoulant .....               | 400  | 765                             | 971                     |
| Heat resistant .....            | 420  | 841                             | 1,069                   |
| High-gloss .....                | 420  | 841                             | 1,069                   |
| High-temperature .....          | 500  | 1,237                           | 1,597                   |
| Inorganic zinc high-build ..... | 340  | 571                             | 728                     |
| Military exterior .....         | 340  | 571                             | 728                     |

TABLE 2 TO SUBPART II OF PART 63.—VOLATILE ORGANIC HAP (VOHAP) LIMITS FOR MARINE COATINGS—Continued

| Coating category                          | VOHAP limits <sup>a b c</sup>                          |                                 |                         |
|---|--|---------------------------------|-------------------------|
|   | Grams/liter coating (minus water and exempt compounds) | Grams/liter solids <sup>d</sup> |                         |
|   |  | t ≥ 4.5° C                      | t < 4.5° C <sup>e</sup> |
| Mist .....                                | 610  | 2,235                           |                         |
| Navigational aids .....                   | 550  | 1,597                           |                         |
| Nonskid .....                             | 340  | 571                             | 728                     |
| Nuclear .....                             | 420  | 841                             | 1,069                   |
| Organic zinc .....                        | 360  | 630                             | 802                     |
| Pretreatment wash primer .....            | 780  | 11,095                          |                         |
| Repair and maint. of thermoplastics ..... | 550  | 1,597                           |                         |
| Rubber camouflage .....                   | 340  | 571                             | 728                     |
| Sealant for thermal spray aluminum .....  | 610  | 2,235                           |                         |
| Special marking .....                     | 490  | 1,178                           |                         |
| Specialty interior .....                  | 340  | 571                             | 728                     |
| Tack coat .....                           | 610  | 2,235                           |                         |
| Undersea weapons systems .....            | 340  | 571                             | 728                     |
| Weld-through preon. primer .....          | 650  | 2,885                           |                         |

<sup>a</sup> The limits are expressed in two sets of equivalent units. Either set of limits may be used for the compliance procedure described in § 63.785(c)(1), but only the limits expressed in units of g/L solids (nonvolatiles) shall be used for the compliance procedures described in § 63.785(c) (2) through (4).

<sup>b</sup> VOC (including exempt compounds listed as HAP) shall be used as a surrogate for VOHAP for those compliance procedures described in § 63.785(c) (1) through (3).

<sup>c</sup> To convert from g/L to lb/gal, multiply by (3.785 L/gal)(1/453.6 lb/g) or 1/120. For compliance purposes, metric units define the standards.

<sup>d</sup> VOHAP limits expressed in units of mass of VOHAP per volume of solids were derived from the VOHAP limits expressed in units of mass of VOHAP per volume of coating assuming the coatings contain no water or exempt compounds and that the volumes of all components within a coating are additive.

<sup>e</sup> These limits apply during cold-weather time periods, as defined in § 63.782. Cold-weather allowances are not given to coatings in categories that permit over a 40 percent VOHAP content by volume. Such coatings are subject to the same limits regardless of weather conditions.

TABLE 3 TO SUBPART II OF PART 63.—SUMMARY OF RECORDKEEPING AND REPORTING REQUIREMENTS <sup>a b c</sup>

| Requirement   | All Opts. |     | Option 1 |     | Option 2 |     | Option 3 |     |
|---|-----------|-----|----------|-----|----------|-----|----------|-----|
|   | Rec       | Rep | Rec      | Rep | Rec      | Rep | Rec      | Rep |
| Notification (§ 63.9(a)–(d)) .....  | X         | X   |          |     |          |     |          |     |
| Implementation plan (§ 63.787(b)) <sup>d</sup> .....  | X         | X   |          |     |          |     |          |     |
| Volume of coating applied at unaffected major sources (§ 63.781(b)) .....                           | X         |     |          |     |          |     |          |     |
| Volume of each low-usage-exempt coating applied at affected sources (§ 63.781(c)) .....             | X         | X   |          |     |          |     |          |     |
| ID of the coatings used, their appropriate coating categories, and the applicable VOHAP limit ..... | X         | X   |          |     |          |     |          |     |
| Determination of whether containers meet the standards described in § 63.783(b)(2) .....            | X         | X   |          |     |          |     |          |     |
| Results of M–24 or other approved tests .....   | X         | X   |          |     |          |     |          |     |
| Certification of the as-supplied VOC content of each batch .....                                    | X         |     |          |     |          |     |          |     |
| Certification of the as-applied VOC content of each batch .....                                     |           |     | X        |     |          |     |          |     |
| Volume of each coating applied .....  |           |     | X        | X   |          |     |          |     |
| Density of each thinner and volume fraction of solids in each batch ...                             |           |     |          |     | X        | X   |          |     |
| Maximum allowable thinning ratio(s) for each batch .....  |           |     |          |     | X        | X   |          |     |
| Volume used of each batch, as supplied .....  |           |     |          |     | X        | X   | X        | X   |
| Total allowable volume of thinner .....   |           |     |          |     | X        | X   | X        | X   |
| Actual volume of thinner used .....   |           |     |          |     | X        | X   | X        | X   |
| Identification of each group of coatings and designated thinners .....                              |           |     |          |     |          |     | X        | X   |

<sup>a</sup> Affected sources that comply with the cold-weather limits must record and report additional information, as specified in § 63.788(b)(3) (ii)(C), (iii)(C), and (iv)(D).

<sup>b</sup> Affected sources that detect a violation must record and report additional information, as specified in § 63.788(b)(4).

<sup>c</sup> OPTION 4: the recordkeeping and reporting requirements of Option 4 are identical to those of Options 1, 2, or 3, depending on whether and how thinners are used. However, when using Option 4, the term “VOHAP” shall be used in lieu of the term “VOC,” and the owner or operator shall record and report the Administrator-approved VOHAP test method or certification procedure.

<sup>d</sup> Major sources that intend to become area sources by the compliance date may, in lieu of submitting an implementation plan, choose to submit a statement of intent as specified in § 63.787(b)(4).

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APPENDIX A TO SUBPART II OF PART 63—VOC DATA SHEET<sup>1</sup>

Properties of the Coating "As Supplied" by the Manufacturer<sup>2</sup>

Coating Manufacturer: \_\_\_\_\_
Coating Identification: \_\_\_\_\_
Batch Identification: \_\_\_\_\_
Supplied To: \_\_\_\_\_

Properties of the coating as supplied<sup>1</sup> to the customer:

A. Coating Density: (Dc)s \_\_\_\_\_ g/L
[ ] ASTM D1475-90\* [ ] Other<sup>3</sup>

\*Incorporation by reference—see §63.14.

<sup>1</sup>Adapted from EPA-340/1-86-016 (July 1986), p. II-2.

<sup>2</sup>The subscript "s" denotes each value is for the coating "as supplied" by the manufacturer.

<sup>3</sup>Explain the other method used under "Remarks."

B. Total Volatiles: (mv)s \_\_\_\_\_ Mass Percent
[ ] ASTM D2369-93\* [ ] Other<sup>3</sup>

C. Water Content: 1. (mw)s \_\_\_\_\_ Mass Percent
[ ] ASTM D3792-91\* [ ] ASTM D4017-90\* [ ] Other<sup>3</sup>

2. (vw)s \_\_\_\_\_ Volume Percent
[ ] Calculated [ ] Other<sup>3</sup>

D. Organic Volatiles: (mo)s \_\_\_\_\_ Mass Percent

E. Nonvolatiles: (vn)s \_\_\_\_\_ Volume Percent
[ ] Calculated [ ] Other<sup>3</sup>

F. VOC Content (VOC)s:

1. \_\_\_\_\_ g/L solids (nonvolatiles)

2. \_\_\_\_\_ g/L coating (less water and exempt compounds)

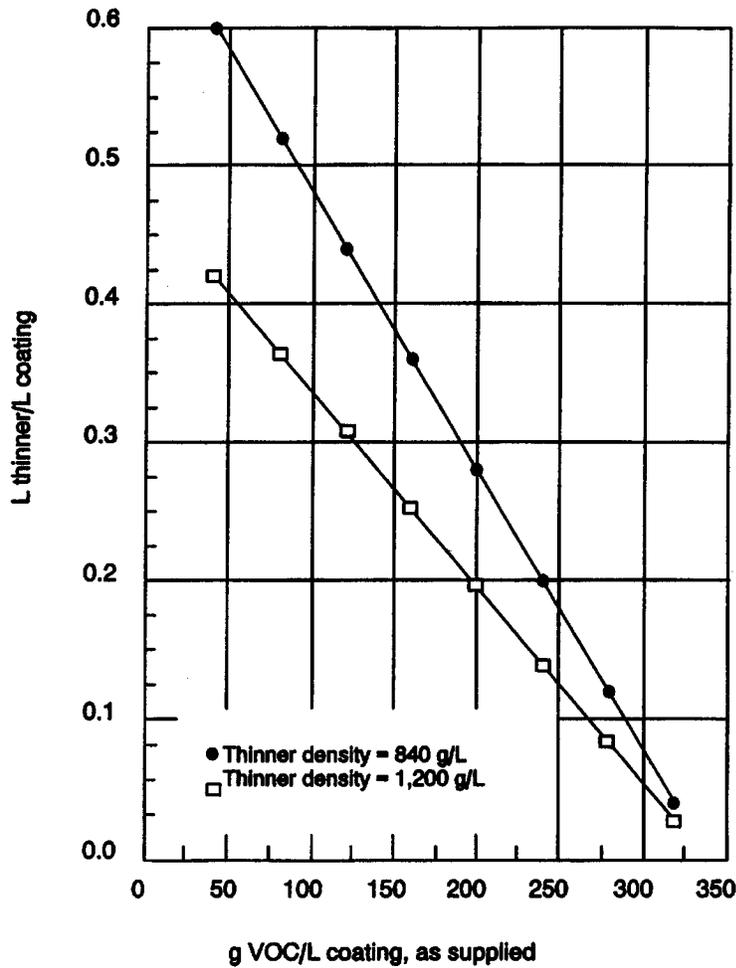
G. Thinner Density: Dth \_\_\_\_\_ g/L

ASTM \_\_\_\_\_ [ ] Other<sup>3</sup>

Remarks: (use reverse side)

Signed: \_\_\_\_\_ Date: \_\_\_\_\_

Appendix B To Subpart II of Part 63 -- Maximum Allowable Thinning Rates As A Function Of As Supplied VOC Content And Thinner Density<sup>a,b</sup>



<sup>a</sup> These graphs represent maximum allowable thinning ratios for general use coatings without water or exempt compounds.

<sup>b</sup> The average density of the volatiles in the coating was assumed = 840 g solvent/L solvent.

**Subpart JJ—National Emission Standards for Wood Furniture Manufacturing Operations**

SOURCE: 60 FR 62936, Dec. 7, 1995, unless otherwise noted.

**§ 63.800 Applicability.**

(a) The affected source to which this subpart applies is each facility that is engaged, either in part or in whole, in the manufacture of wood furniture or wood furniture components and that is located at a plant site that is a major source as defined in 40 CFR part 63.2. The owner or operator of a source that meets the criteria for an incidental furniture manufacturer shall maintain purchase or usage records demonstrating the source meets the criteria specified in § 63.801 of this subpart, but the source shall not be subject to any other provisions of this subpart.

(b) A source that complies with the limits and criteria specified in paragraphs (b)(1), (b)(2), or (b)(3) of this section is an area source for the purposes of this subpart and is not subject to any other provision of this rule, provided that: In the case of paragraphs (b)(1) and (b)(2), finishing materials, adhesives, cleaning solvents and washoff solvents account for at least 90 percent of annual HAP emissions at the plant site, and if the plant site has HAP emissions that do not originate from the listed materials, the owner or operator keeps any records necessary to demonstrate that the 90 percent criterion is met. A source that initially relies on the limits and criteria specified in paragraphs (b)(1), (b)(2), and (b)(3) to become an area source, but subsequently exceeds the relevant limit (without first obtaining and complying with other limits that keep its potential to emit hazardous air pollutants below major source levels), becomes a major source and must comply thereafter with all applicable provisions of this subpart starting on the applicable compliance date in § 63.800. Nothing in this paragraph (b) is intended to preclude a source from limiting its potential to emit through other appropriate mechanisms that may be available through the permitting authority.

(1) The owner or operator of the source uses no more than 250 gallons per month, for every month, of coating, gluing, cleaning, and washoff materials at the source, including materials used for source categories other than wood furniture (surface coating), but excluding materials used in routine janitorial or facility grounds maintenance, personal uses by employees or other persons, the use of products for the purpose of maintaining motor vehicles operated by the facility, or the use of toxic chemicals contained in intake water (used for processing or noncontact cooling) or intake air (used either as compressed air or for combustion). The owner or operator shall maintain records of the total gallons of coating, gluing, cleaning, and washoff materials used each month, and upon request submit such records to the Administrator. These records shall be maintained for five years.

(2) The owner or operator of the source uses no more than 3,000 gallons per rolling 12-month period, for every 12-month period, of coating, gluing, cleaning, and washoff materials at the source, including materials used for source categories other than wood furniture (surface coating), but excluding materials used in routine janitorial or facility grounds maintenance, personal uses by employees or other persons, the use of products for the purpose of maintaining motor vehicles operated by the facility, or the use of toxic chemicals contained in intake water (used for processing or noncontact cooling) or intake air (used either as compressed air or for combustion). A rolling 12-month period includes the previous 12 months of operation. The owner or operator of the source shall maintain records of the total gallons of coating, gluing, cleaning, and washoff materials used each month and the total gallons used each previous month, and upon request submit such records to the Administrator. Because records are needed over the previous set of 12 months, the owner or operator shall keep monthly records beginning no less than one year before the compliance date specified in § 63.800(e). Records shall be maintained for five years.

(3) The source uses materials containing no more than 4.5 Mg (5 tons) of any one HAP per rolling 12-month period or no more than 11.4 Mg (12.5 tons) of any combination of HAP per rolling 12-month period, including materials from source categories other than wood furniture; and at least 90 percent of the plantwide emissions per rolling 12-month period are associated with the manufacture of wood furniture or wood furniture components. The owner or operator shall maintain records that demonstrate that annual emissions do not exceed these levels, including monthly usage records for all finishing, gluing, cleaning, and washoff materials; certified product data sheets for these materials; and any other records necessary to document emissions from source categories other than wood furniture and upon request submit such records to the Administrator. These records shall be maintained for five years.

(c) This subpart does not apply to research or laboratory facilities as defined in §63.801.

(d) Owners or operators of affected sources shall also comply with the requirements of subpart A of this part (General Provisions), according to the applicability of subpart A to such sources, as identified in Table 1 of this subpart.

(e) The compliance date for existing affected sources that emit less than 50 tons per year of HAP in 1996 is December 7, 1998. The compliance date for existing affected sources that emit 50 tons or more of hazardous air pollutants in 1996 is November 21, 1997. The owner or operator of an existing area source that increases its emissions of (or its potential to emit) HAP such that the source becomes a major source that is subject to this subpart shall comply with this subpart one year after becoming a major source.

(f) New affected sources must comply with the provisions of this standard immediately upon startup or by December 7, 1995, whichever is later. New area sources that become major sources shall comply with the provisions of this standard immediately upon becoming a major source.

(g) Reconstructed affected sources are subject to the requirements for new

affected sources. The costs associated with the purchase and installation of air pollution control equipment (e.g., incinerators, carbon adsorbers, etc.) are not considered in determining whether the facility has been reconstructed, unless the control equipment is required as part of the process (e.g., product recovery). Additionally, the costs of retrofitting and replacement of equipment that is installed specifically to comply with this subpart are not considered reconstruction costs. For example, an affected source may convert to waterborne coatings to meet the requirements of this subpart. At most facilities, this conversion will require the replacement of existing storage tanks, mix equipment, and transfer lines. The cost of replacing the equipment is not considered in determining whether the facility has been reconstructed.

#### §63.801 Definitions.

(a) All terms used in this subpart that are not defined below have the meaning given to them in the CAA and in subpart A (General Provisions) of this part.

*Adhesive* means any chemical substance that is applied for the purpose of bonding two surfaces together other than by mechanical means. Under this subpart, adhesives shall not be considered coatings or finishing materials. Products used on humans and animals, adhesive tape, contact paper, or any other product with an adhesive incorporated onto or in an inert substrate shall not be considered adhesives under this subpart.

*Administrator* means the Administrator of the United States Environmental Protection Agency or his or her authorized representative.

*Aerosol adhesive* means an adhesive that is dispensed from a pressurized container as a suspension of fine solid or liquid particles in gas.

*Affected source* means a wood furniture manufacturing facility that is engaged, either in part or in whole, in the manufacture of wood furniture or wood furniture components and that is located at a plant site that is a major source as defined in 40 CFR part 63.2,

excluding sources that meet the criteria established in §63.800(a), (b) and (c) of this subpart.

*Alternative method* means any method of sampling and analyzing for an air pollutant that is not a reference or equivalent method but has been demonstrated to the Administrator's satisfaction to, in specific cases, produce results adequate for a determination of compliance.

*As applied* means the HAP and solids content of the coating or contact adhesive that is actually used for coating or gluing the substrate. It includes the contribution of materials used for in-house dilution of the coating or contact adhesive.

*Basecoat* means a coat of colored material, usually opaque, that is applied before graining inks, glazing coats, or other opaque finishing materials, and is usually topcoated for protection.

*Baseline conditions* means the conditions that exist prior to an affected source implementing controls, such as a control system.

*Building enclosure* means a building housing a process that meets the requirements of a temporary total enclosure. The EPA Method 204E is used to identify all emission points from the building enclosure and to determine which emission points must be tested. For additional information see *Guidelines for Determining Capture Efficiency*, January 1994. Docket No. A-93-10, Item No. IV-B-1.

*Capture device* means a hood, enclosed room, floor sweep, or other means of collecting solvent emissions or other pollutants into a duct so that the pollutant can be directed to a pollution control device such as an incinerator or carbon adsorber.

*Capture efficiency* means the fraction of all organic vapors generated by a process that are directed to a control device.

*Certified product data sheet (CPDS)* means documentation furnished by coating or adhesive suppliers or an outside laboratory that provides the HAP content of a finishing material, contact adhesive, or solvent, by percent weight, measured using the EPA Method 311 (as promulgated in this subpart), or an equivalent or alternative method (or formulation data if the coating meets

the criteria specified in §63.805(a)); the solids content of a finishing material or contact adhesive by percent weight, determined using data from the EPA Method 24, or an alternative or equivalent method (or formulation data if the coating meets the criteria specified in §63.805(a)); and the density, measured by EPA Method 24 or an alternative or equivalent method. Therefore, the reportable HAP content should represent the maximum aggregate emissions potential of the finishing material, adhesive, or solvent in concentrations greater than or equal to 1.0 percent by weight or 0.1 percent for HAP that are carcinogens, as defined by the Occupational Safety and Health Administration Hazard Communication Standard (29 CFR part 1910), as formulated. The purpose of the CPDS is to assist the affected source in demonstrating compliance with the emission limitations presented in §63.802.

(NOTE: Because the optimum analytical conditions under EPA Method 311 vary by coating, the coating or adhesive supplier may also choose to include on the CPDS the optimum analytical conditions for analysis of the coating, adhesive, or solvent using EPA Method 311. Such information may include, but not be limited to, separation column, oven temperature, carrier gas, injection port temperature, extraction solvent, and internal standard.)

*Cleaning operations* means operations in which organic solvent is used to remove coating materials or adhesives from equipment used in wood furniture manufacturing operations.

*Coating* means a protective, decorative, or functional film applied in a thin layer to a surface. Such materials include, but are not limited to, paints, topcoats, varnishes, sealers, stains, washcoats, basecoats, enamels, inks, and temporary protective coatings.

*Coating application station* means the part of a coating operation where the coating is applied, e.g., a spray booth.

*Coating operation* means those activities in which a coating is applied to a substrate and is subsequently air-dried, cured in an oven, or cured by radiation.

*Coating solids (or solids)* means the part of the coating which remains after the coating is dried or cured; solids content is determined using data from

the EPA Method 24, or an equivalent or alternative method.

*Compliant coating/contact adhesive* means a finishing material, contact adhesive, or strippable booth coating that meets the emission limits specified in Table 3 of this subpart.

*Contact adhesive* means an adhesive that is applied to two substrates, dried, and mated under only enough pressure to result in good contact. The bond is immediate and sufficiently strong to hold pieces together without further clamping, pressure, or airing.

*Continuous coater* means a finishing system that continuously applies finishing materials onto furniture parts moving along a conveyor. Finishing materials that are not transferred to the part are recycled to a reservoir. Several types of application methods can be used with a continuous coater including spraying, curtain coating, roll coating, dip coating, and flow coating.

*Continuous compliance* means that the affected source is meeting the emission limitations and other requirements of the rule at all times and is fulfilling all monitoring and recordkeeping provisions of the rule in order to demonstrate compliance.

*Control device* means any equipment that reduces the quantity of a pollutant that is emitted to the air. The device may destroy or secure the pollutant for subsequent recovery. Includes, but is not limited to, incinerators, carbon adsorbers, and condensers.

*Control device efficiency* means the ratio of the pollutant released by a control device and the pollutant introduced to the control device.

*Control system* means the combination of capture and control devices used to reduce emissions to the atmosphere.

*Conventional air spray* means a spray coating method in which the coating is atomized by mixing it with compressed air and applied at an air pressure greater than 10 pounds per square inch (gauge) at the point of atomization. Airless and air assisted airless spray technologies are not conventional air spray because the coating is not atomized by mixing it with compressed air. Electrostatic spray technology is also not considered conventional air spray because an electrostatic charge is em-

ployed to attract the coating to the workpiece.

*Data quality objective (DQO) approach* means a set of approval criteria that must be met so that data from an alternative test method can be used in determining the capture efficiency of a control system. For additional information, see *Guidelines for Determining Capture Efficiency*, January 1994. (Docket No. A-93-10, Item No. IV-B-1).

*Day* means a period of 24 consecutive hours beginning at midnight local time, or beginning at a time consistent with a facility's operating schedule.

*Disposed offsite* means sending used organic solvent or coatings outside of the facility boundaries for disposal.

*Emission* means the release or discharge, whether directly or indirectly, of HAP into the ambient air.

*Enamel* means a coat of colored material, usually opaque, that is applied as a protective topcoat over a basecoat, primer, or previously applied enamel coats. In some cases, another finishing material may be applied as a topcoat over the enamel.

*Equipment leak* means emissions of volatile hazardous air pollutants from pumps, valves, flanges, or other equipment used to transfer or apply coatings, adhesives, or organic solvents.

*Equivalent method* means any method of sampling and analyzing for an air pollutant that has been demonstrated to the Administrator's satisfaction to have a consistent and quantitatively known relationship to the reference method, under specific conditions.

*Finishing material* means a coating used in the wood furniture industry. Such materials include, but are not limited to, stains, basecoats, washcoats, enamels, sealers, and topcoats.

*Finishing operation* means those operations in which a finishing material is applied to a substrate and is subsequently air-dried, cured in an oven, or cured by radiation.

*Foam adhesive* means a contact adhesive used for gluing foam to fabric, foam to foam, and fabric to wood.

*Gluing operation* means those operations in which adhesives are used to join components, for example, to apply a laminate to a wood substrate or foam to fabric.

*Incidental wood furniture manufacturer* means a major source that is primarily engaged in the manufacture of products other than wood furniture or wood furniture components and that uses no more than 100 gallons per month of finishing material or adhesives in the manufacture of wood furniture or wood furniture components.

*Incinerator* means, for the purposes of this industry, an enclosed combustion device that thermally oxidizes volatile organic compounds to CO and CO<sub>2</sub>. This term does not include devices that burn municipal or hazardous waste material.

*Janitorial maintenance* means the upkeep of equipment or building structures that is not directly related to the manufacturing process, for example, cleaning of restroom facilities.

*Lower confidence limit (LCL) approach* means a set of approval criteria that must be met so that data from an alternative test method can be used in determining the capture efficiency of a control system. For additional information, see *Guidelines for Determining Capture Efficiency*, January 1994. (Docket No. A-93-10, Item No. IV-B-1).

*Material safety data sheet (MSDS)* means the documentation required for hazardous chemicals by the Occupational Safety and Health Administration (OSHA) Hazard Communication Standard (29 CFR Part 1910) for a solvent, cleaning material, contact adhesive, coating, or other material that identifies select reportable hazardous ingredients of the material, safety and health considerations, and handling procedures.

*Noncompliant coating/contact adhesive* means a finishing material, contact adhesive, or strippable booth coating that has a VHAP content (VOC content for the strippable booth coating) greater than the emission limitation presented in Table 3 of this subpart.

*Nonporous substrate* means a surface that is impermeable to liquids. Examples include metal, rigid plastic, flexible vinyl, and rubber.

*Normally closed container* means a container that is closed unless an operator is actively engaged in activities such as emptying or filling the container.

*Operating parameter value* means a minimum or maximum value established for a control device or process parameter that, if achieved by itself or in combination with one or more other operating parameter values, determines that an owner or operator has complied with an applicable emission limit.

*Organic solvent* means a volatile organic liquid that is used for dissolving or dispersing constituents in a coating or contact adhesive, adjusting the viscosity of a coating or contact adhesive, or cleaning equipment. When used in a coating or contact adhesive, the organic solvent evaporates during drying and does not become a part of the dried film.

*Overall control efficiency* means the efficiency of a control system, calculated as the product of the capture and control device efficiencies, expressed as a percentage.

*Permanent total enclosure* means a permanently installed enclosure that completely surrounds a source of emissions such that all emissions are captured and contained for discharge through a control device. For additional information, see *Guidelines for Determining Capture Efficiency*, January 1994. (Docket No. A-93-10, Item No. IV-B-1).

*Recycled onsite* means the reuse of an organic solvent in a process other than cleaning or washoff.

*Reference method* means any method of sampling and analyzing for an air pollutant that is published in Appendix A of 40 CFR part 60.

*Research or laboratory facility* means any stationary source whose primary purpose is to conduct research and development to develop new processes and products where such source is operated under the close supervision of technically trained personnel and is not engaged in the manufacture of products for commercial sale in commerce, except in a de minimis manner.

*Responsible official* has the meaning given to it in 40 CFR part 70, State Operating Permit Programs (Title V permits).

*Sealer* means a finishing material used to seal the pores of a wood substrate before additional coats of finishing material are applied. Special purpose finishing materials that are used

in some finishing systems to optimize aesthetics are not sealers.

*Solvent* means a liquid used in a coating or contact adhesive to dissolve or disperse constituents and/or to adjust viscosity. It evaporates during drying and does not become a part of the dried film.

*Stain* means any color coat having a solids content by weight of no more than 8.0 percent that is applied in single or multiple coats directly to the substrate. It includes, but is not limited to, nongrain raising stains, equalizer stains, prestains, sap stains, body stains, no-wipe stains, penetrating stains, and toners.

*Storage containers* means vessels or tanks, including mix equipment, used to hold finishing, gluing, cleaning, or washoff materials.

*Strippable spray booth material* means a coating that:

- (1) Is applied to a spray booth wall to provide a protective film to receive overspray during finishing operations;
- (2) That is subsequently peeled off and disposed; and
- (3) By achieving (1) and (2), reduces or eliminates the need to use organic solvents to clean spray booth walls.

*Substrate* means the surface onto which a coating or contact adhesive is applied (or into which a coating or contact adhesive is impregnated).

*Temporary total enclosure* means an enclosure that meets the requirements of § 63.805(e)(1) (i) through (iv) and is not permanent, but constructed only to measure the capture efficiency of pollutants emitted from a given source. Additionally, any exhaust point from the enclosure shall be at least four equivalent duct or hood diameters from each natural draft opening. For additional information, see *Guidelines for Determining Capture Efficiency*, January 1994. (Docket No. A-93-10, Item No. IV-B-1).

*Thinner* means a volatile liquid that is used to dilute coatings or contact adhesives (to reduce viscosity, color strength, and solids, or to modify drying conditions).

*Topcoat* means the last film-building finishing material that is applied in a finishing system.

*Touchup and repair* means the application of finishing materials to cover minor finishing imperfections.

*VHAP* means any volatile hazardous air pollutant listed in Table 2 to Subpart JJ.

*VHAP of potential concern* means any VHAP from the nonthreshold, high concern, or unrankable list in Table b of this subpart.

*Volatile organic compound (VOC)* means any organic compound which participates in atmospheric photochemical reactions, that is, any organic compound other than those which the Administrator designates as having negligible photochemical reactivity. A VOC may be measured by a reference method, an equivalent method, an alternative method, or by procedures specified under any rule. A reference method, an equivalent method, or an alternative method, however, may also measure nonreactive organic compounds. In such cases, the owner or operator may exclude the nonreactive organic compounds when determining compliance with a standard. For a list of compounds that the Administrator has designated as having negligible photochemical reactivity, refer to 40 CFR part 51.10.

*Washcoat* means a transparent special purpose finishing material having a solids content by weight of 12.0 percent by weight or less. Washcoats are applied over initial stains to protect, to control color, and to stiffen the wood fibers in order to aid sanding.

*Washoff operations* means those operations in which organic solvent is used to remove coating from wood furniture or a wood furniture component.

*Wood furniture* means any product made of wood, a wood product such as rattan or wicker, or an engineered wood product such as particleboard that is manufactured under any of the following standard industrial classification codes: 2434, 2511, 2512, 2517, 2519, 2521, 2531, 2541, 2599, or 5712.

*Wood furniture component* means any part that is used in the manufacture of wood furniture. Examples include, but are not limited to, drawer sides, cabinet doors, seat cushions, and laminated tops.

*Wood furniture manufacturing operations* means the finishing, gluing,

cleaning, and washoff operations associated with the production of wood furniture or wood furniture components.

(b) The nomenclature used in this subpart has the following meaning:

(1)  $A_k$  = the area of each natural draft opening (k) in a total enclosure, in square meters.

(2)  $C_c$  = the VHAP content of a finishing material (c), in kilograms of volatile hazardous air pollutants per kilogram of coating solids (kg VHAP/kg solids), as supplied. Also given in pounds of volatile hazardous air pollutants per pound of coating solids (lb VHAP/lb solids).

(3)  $C_{aj}$  = the concentration of VHAP in gas stream (j) exiting the control device, in parts per million by volume.

(4)  $C_{bi}$  = the concentration of VHAP in gas stream (i) entering the control device, in parts per million by volume.

(5)  $C_{di}$  = the concentration of VHAP in gas stream (i) entering the control device from the affected source, in parts per million by volume.

(6)  $C_{rk}$  = the concentration of VHAP in uncontrolled gas stream (k) emitted directly to the atmosphere from the affected source, in parts per million by volume.

(7) E = the emission limit achieved by an emission point or a set of emission points, in kg VHAP/kg solids (lb VHAP/lb solids).

(8) F = the control device efficiency, expressed as a fraction.

(9) FV = the average inward face velocity across all natural draft openings in a total enclosure, in meters per hour.

(10) G = the VHAP content of a contact adhesive, in kg VHAP/kg solids (lb VHAP/lb solids), as applied.

(11) M = the mass of solids in finishing material used monthly, kg solids/month (lb solids/month).

(12) N = the capture efficiency, expressed as a fraction.

(13)  $Q_{aj}$  = the volumetric flow rate of gas stream (j) exiting the control device, in dry standard cubic meters per hour.

(14)  $Q_{bi}$  = the volumetric flow rate of gas stream (i) entering the control device, in dry standard cubic meters per hour.

(15)  $Q_{di}$  = the volumetric flow rate of gas stream (i) entering the control de-

vice from the emission point, in dry standard cubic meters per hour.

(16)  $Q_{rk}$  = the volumetric flow rate of uncontrolled gas stream (k) emitted directly to the atmosphere from the emission point, in dry standard cubic meters per hour.

(17)  $Q_{in,i}$  = the volumetric flow rate of gas stream (i) entering the total enclosure through a forced makeup air duct, in standard cubic meters per hour (wet basis).

(18)  $Q_{out,j}$  = the volumetric flow rate of gas stream (j) exiting the total enclosure through an exhaust duct or hood, in standard cubic meters per hour (wet basis).

(19) R = the overall efficiency of the control system, expressed as a percentage.

(20) S = the VHAP content of a solvent, expressed as a weight fraction, added to finishing materials.

(21) W = the amount of solvent, in kilograms (pounds), added to finishing materials during the monthly averaging period.

(22) ac = after the control system is installed and operated.

(23) bc = before control.

#### § 63.802 Emission limits.

(a) Each owner or operator of an existing affected source subject to this subpart shall:

(1) Limit VHAP emissions from finishing operations by meeting the emission limitations for existing sources presented in Table 3 of this subpart, using any of the compliance methods in § 63.804(a). To determine VHAP emissions from a finishing material containing formaldehyde or styrene, the owner or operator of the affected source shall use the methods presented in § 63.803(l)(2) for determining styrene and formaldehyde usage.

(2) Limit VHAP emissions from contact adhesives by achieving a VHAP limit for contact adhesives based on the following criteria:

(i) For foam adhesives (contact adhesives used for upholstery operations) used in products that meet the upholstered seating flammability requirements of California Technical Bulletin

116, 117, or 133, the Business and Institutional Furniture Manufacturers Association's (BIFMA's) X5.7, UFAC flammability testing, or any similar requirements from local, State, or Federal fire regulatory agencies, the VHAP content of the adhesive shall not exceed 1.8 kg VHAP/kg solids (1.8 lb VHAP/lb solids), as applied; or

(ii) For all other contact adhesives (including foam adhesives used in products that do not meet the standards presented in paragraph (a)(2)(i) of this section, but excluding aerosol adhesives and excluding contact adhesives applied to nonporous substrates, the VHAP content of the adhesive shall not exceed 1.0 kg VHAP/kg solids (1.0 lb VHAP/lb solids), as applied.

(3) Limit HAP emissions from strippable spray booth coatings by using coatings that contain no more than 0.8 kg VOC/kg solids (0.8 lb VOC/lb solids), as applied.

(b) Each owner or operator of a new affected source subject to this subpart shall:

(1) Limit VHAP emissions from finishing operations by meeting the emission limitations for new sources presented in Table 3 of this subpart using any of the compliance methods in § 63.804(d). To determine VHAP emissions from a finishing material containing formaldehyde or styrene, the owner or operator of the affected source shall use the methods presented in § 63.803(l)(2) for determining styrene and formaldehyde usage.

(2) Limit VHAP emissions from contact adhesives by achieving a VHAP limit for contact adhesives, excluding aerosol adhesives and excluding contact adhesives applied to nonporous substrates, of no greater than 0.2 kg VHAP/kg solids (0.2 lb VHAP/lb solids), as applied, using either of the compliance methods in § 63.804(e).

(3) Limit HAP emissions from strippable spray booth coatings by using coatings that contain no more than 0.8 kg VOC/kg solids (0.8 lb VOC/lb solids), as applied.

**§ 63.803 Work practice standards.**

(a) *Work practice implementation plan.* Each owner or operator of an affected source subject to this subpart shall prepare and maintain a written work

practice implementation plan that defines environmentally desirable work practices for each wood furniture manufacturing operation and addresses each of the work practice standards presented in paragraphs (b) through (l) of this section. The plan shall be developed no more than 60 days after the compliance date. The written work practice implementation plan shall be available for inspection by the Administrator upon request. If the Administrator determines that the work practice implementation plan does not adequately address each of the topics specified in paragraphs (b) through (l) of this section or that the plan does not include sufficient mechanisms for ensuring that the work practice standards are being implemented, the Administrator may require the affected source to modify the plan. Revisions or modifications to the plan do not require a revision of the source's Title V permit.

(b) *Operator training course.* Each owner or operator of an affected source shall train all new and existing personnel, including contract personnel, who are involved in finishing, gluing, cleaning, and washoff operations, use of manufacturing equipment, or implementation of the requirements of this subpart. All new personnel, those hired after the compliance date of the standard, shall be trained upon hiring. All existing personnel, those hired before the compliance date of the standard, shall be trained within six months of the compliance date of the standard. All personnel shall be given refresher training annually. The affected source shall maintain a copy of the training program with the work practice implementation plan. The training program shall include, at a minimum, the following:

(1) A list of all current personnel by name and job description that are required to be trained;

(2) An outline of the subjects to be covered in the initial and refresher training for each position or group of personnel;

(3) Lesson plans for courses to be given at the initial and the annual refresher training that include, at a minimum, appropriate application techniques, appropriate cleaning and

washoff procedures, appropriate equipment setup and adjustment to minimize finishing material usage and overspray, and appropriate management of cleanup wastes; and

(4) A description of the methods to be used at the completion of initial or refresher training to demonstrate and document successful completion.

(c) *Inspection and maintenance plan.* Each owner or operator of an affected source shall prepare and maintain with the work practice implementation plan a written leak inspection and maintenance plan that specifies:

(1) A minimum visual inspection frequency of once per month for all equipment used to transfer or apply coatings, adhesives, or organic solvents;

(2) An inspection schedule;

(3) Methods for documenting the date and results of each inspection and any repairs that were made;

(4) The timeframe between identifying the leak and making the repair, which adheres, at a minimum, to the following schedule:

(i) A first attempt at repair (e.g., tightening of packing glands) shall be made no later than five calendar days after the leak is detected; and

(ii) Final repairs shall be made within 15 calendar days after the leak is detected, unless the leaking equipment is to be replaced by a new purchase, in which case repairs shall be completed within three months.

(d) *Cleaning and washoff solvent accounting system.* Each owner or operator of an affected source shall develop an organic solvent accounting form to record:

(1) The quantity and type of organic solvent used each month for washoff and cleaning, as defined in §63.801 of this subpart;

(2) The number of pieces washed off, and the reason for the washoff; and

(3) The quantity of spent solvent generated from each washoff and cleaning operation each month, and whether it is recycled onsite or disposed offsite.

(e) *Chemical composition of cleaning and washoff solvents.* Each owner or operator of an affected source shall not use cleaning or washoff solvents that contain any of the pollutants listed in Table 4 to this subpart, in concentra-

tions subject to MSDS reporting as required by OSHA.

(f) *Spray booth cleaning.* Each owner or operator of an affected source shall not use compounds containing more than 8.0 percent by weight of VOC for cleaning spray booth components other than conveyors, continuous coaters and their enclosures, or metal filters, unless the spray booth is being refurbished. If the spray booth is being refurbished, that is the spray booth coating or other protective material used to cover the booth is being replaced, the affected source shall use no more than 1.0 gallon of organic solvent per booth to prepare the surface of the booth prior to applying the booth coating.

(g) *Storage requirements.* Each owner or operator of an affected source shall use normally closed containers for storing finishing, gluing, cleaning, and washoff materials.

(h) *Application equipment requirements.* Each owner or operator of an affected source shall use conventional air spray guns to apply finishing materials only under any of the following circumstances:

(1) To apply finishing materials that have a VOC content no greater than 1.0 lb VOC/lb solids, as applied;

(2) For touchup and repair under the following conditions:

(i) The touchup and repair occurs after completion of the finishing operation; or

(ii) The touchup and repair occurs after the application of stain and before the application of any other type of finishing material, and the materials used for touchup and repair are applied from a container that has a volume of no more than 2.0 gallons.

(3) When spray is automated, that is, the spray gun is aimed and triggered automatically, not manually;

(4) When emissions from the finishing application station are directed to a control device;

(5) The conventional air gun is used to apply finishing materials and the cumulative total usage of that finishing material is no more than 5.0 percent of the total gallons of finishing material used during that semiannual period; or

(6) The conventional air gun is used to apply stain on a part for which it is technically or economically infeasible to use any other spray application technology.

The affected source shall demonstrate technical or economic infeasibility by submitting to the Administrator a videotape, a technical report, or other documentation that supports the affected source's claim of technical or economic infeasibility. The following criteria shall be used, either independently or in combination, to support the affected source's claim of technical or economic infeasibility:

(i) The production speed is too high or the part shape is too complex for one operator to coat the part and the application station is not large enough to accommodate an additional operator; or

(ii) The excessively large vertical spray area of the part makes it difficult to avoid sagging or runs in the stain.

(i) *Line cleaning.* Each owner or operator of an affected source shall pump or drain all organic solvent used for line cleaning into a normally closed container.

(j) *Gun cleaning.* Each owner or operator of an affected source shall collect all organic solvent used to clean spray guns into a normally closed container.

(k) *Washoff operations.* Each owner or operator of an affected source shall control emissions from washoff operations by:

(1) Using normally closed tanks for washoff; and

(2) Minimizing dripping by tilting or rotating the part to drain as much solvent as possible.

(l) *Formulation assessment plan for finishing operations.* Each owner or operator of an affected source shall prepare and maintain with the work practice implementation plan a formulation assessment plan that:

(1) Identifies VHAP from the list presented in Table 5 of this subpart that are being used in finishing operations by the affected source;

(2) Establishes a baseline level of usage by the affected source, for each VHAP identified in paragraph (l)(1) of this section. The baseline usage level shall be the highest annual usage from

1994, 1995, or 1996, for each VHAP identified in paragraph (l)(1) of this section. For formaldehyde, the baseline level of usage shall be based on the amount of free formaldehyde present in the finishing material when it is applied. For styrene, the baseline level of usage shall be an estimate of unreacted styrene, which shall be calculated by multiplying the amount of styrene monomer in the finishing material, when it is applied, by a factor of 0.16. Sources using a control device to reduce emissions may adjust their usage based on the overall control efficiency of the control system, which is determined using the equation in §63.805 (d) or (e).

(3) Tracks the annual usage of each VHAP identified in (l)(1) by the affected source that is present in amounts subject to MSDS reporting as required by OSHA.

(4) If, after November 1998, the annual usage of the VHAP identified in paragraph (l)(1) exceeds its baseline level, then the owner or operator of the affected source shall provide a written notification to the permitting authority that describes the amount of the increase and explains the reasons for exceedance of the baseline level. The following explanations would relieve the owner or operator from further action, unless the affected source is not in compliance with any State regulations or requirements for that VHAP:

(i) The exceedance is no more than 15.0 percent above the baseline level;

(ii) Usage of the VHAP is below the de minimis level presented in Table 5 of this subpart for that VHAP (sources using a control device to reduce emissions may adjust their usage based on the overall control efficiency of the control system, which is determined using the procedures in §63.805 (d) or (e);

(iii) The affected source is in compliance with its State's air toxic regulations or guidelines for the VHAP; or

(iv) The source of the pollutant is a finishing material with a VOC content of no more than 1.0 kg VOC/kg solids (1.0 lb VOC/lb solids), as applied.

(5) If none of the above explanations are the reason for the increase, the owner or operator shall confer with the permitting authority to discuss the reason for the increase and whether

there are practical and reasonable technology-based solutions for reducing the usage. The evaluation of whether a technology is reasonable and practical shall be based on cost, quality, and marketability of the product, whether the technology is being used successfully by other wood furniture manufacturing operations, or other criteria mutually agreed upon by the permitting authority and owner or operator. If there are no practical and reasonable solutions, the facility need take no further action. If there are solutions, the owner or operator shall develop a plan to reduce usage of the pollutant to the extent feasible. The plan shall address the approach to be used to reduce emissions, a timetable for implementing the plan, and a schedule for submitting notification of progress.

(6) If after November 1998, an affected source uses a VHAP of potential concern for which a baseline level has not been previously established, then the baseline level shall be established as the de minimis level, based on 70 year exposure levels and data provided in the proposed rulemaking pursuant to Section 112(g) of the CAA, for that pollutant. A list of VHAP of potential concern is provided in Table 6 of this subpart. If usage of the VHAP of potential concern exceeds the de minimis level, then the affected source shall provide an explanation to the permitting authority that documents the reason for exceedance of the de minimis level. If the explanation is not one of those listed in paragraphs (l)(4)(i) through (l)(4)(iv), the affected source shall follow the procedures established in (l)(5).

**§ 63.804 Compliance procedures and monitoring requirements.**

(a) The owner or operator of an existing affected source subject to § 63.802(a)(1) shall comply with those provisions using any of the methods presented in § 63.804 (a)(1) through (a)(4).

(1) Calculate the average VHAP content for all finishing materials used at the facility using Equation 1, and maintain a value of E no greater than 1.0;

$$E = \frac{(M_{c1}C_{c1} + M_{c2}C_{c2} + \dots + M_{cn}C_{cn} + S_1W_1 + S_2W_2 + \dots + S_nW_n)}{(M_{c1} + M_{c2} + \dots + M_{cn})} \quad \text{Equation 1}$$

(2) Use compliant finishing materials according to the following criteria:

(i) Demonstrate that each stain, sealer, and topcoat has a VHAP content of no more than 1.0 kg VHAP/kg solids (1.0 lb VHAP/lb solids), as applied, and each thinner contains no more than 10.0 percent VHAP by weight by maintaining certified product data sheets for each coating and thinner;

(ii) Demonstrate that each washcoat, basecoat, and enamel that is purchased pre-made, that is, it is not formulated onsite by thinning another finishing material, has a VHAP content of no more than 1.0 kg VHAP/kg solids (1.0 lb VHAP/lb solids), as applied, and each thinner contains no more than 10.0 percent VHAP by weight by maintaining certified product data sheets for each coating and thinner; and

(iii) Demonstrate that each washcoat, basecoat, and enamel that is formulated at the affected source is formulated using a finishing material containing no more than 1.0 kg VHAP/kg solids (1.0 lb VHAP/lb solids) and a thinner containing no more than 3.0 percent VHAP by weight.

(3) Use a control system with an overall control efficiency (R) such that the value of  $E_{ac}$  in Equation 2 is no greater than 1.0.

$$R = [(E_{bc} - E_{ac})/E_{bc}] (100) \quad \text{Equation 2}$$

The value of  $E_{bc}$  in Equation 2 shall be calculated using Equation 1; or

(4) Use any combination of an averaging approach, as described in paragraph (a)(1) of this section, compliant finishing materials, as described in paragraph (a)(2) of this section, and a control system, as described in paragraph (a)(3) of this section.

(b) The owner or operator of an affected source subject to § 63.802(a)(2)(i) shall comply with the provisions by using compliant foam adhesives with a VHAP content no greater than 1.8 kg VHAP/kg solids (1.8 lb VHAP/lb solids), as applied.

(c) The owner or operator of an affected source subject to § 63.802(a)(2)(ii) shall comply with those provisions by using either of the methods presented in § 63.804 (c)(1) and (c)(2).

(1) Use compliant contact adhesives with a VHAP content no greater than 1.0 kg VHAP/kg solids (1.0 lb VHAP/lb solids), as applied; or

(2) Use a control system with an overall control efficiency (R) such that the value of  $G_{ac}$  is no greater than 1.0.  $R = [(G_{bc} - G_{ac}) / G_{bc}] (100)$  Equation 3

(d) The owner or operator of a new affected source subject to § 63.802(b)(1) may comply with those provisions by using any of the following methods:

(1) Calculate the average VHAP content across all finishing materials used at the facility using Equation 1, and maintain a value of E no greater than 0.8;

(2) Use compliant finishing materials according to the following criteria:

(i) Demonstrate that each sealer and topcoat has a VHAP content of no more than 0.8 kg VHAP/kg solids (0.8 lb VHAP/lb solids), as applied, each stain has a VHAP content of no more than 1.0 kg VHAP/kg solids (1.0 lb VHAP/lb solids), as applied, and each thinner contains no more than 10.0 percent VHAP by weight;

(ii) Demonstrate that each washcoat, basecoat, and enamel that is purchased pre-made, that is, it is not formulated onsite by thinning another finishing material, has a VHAP content of no more than 0.8 kg VHAP/kg solids (0.8 lb VHAP/lb solids), as applied, and each thinner contains no more than 10.0 percent VHAP by weight; and

(iii) Demonstrate that each washcoat, basecoat, and enamel that is formulated onsite is formulated using a finishing material containing no more than 0.8 kg VHAP/kg solids (0.8 lb VHAP/lb solids) and a thinner containing no more than 3.0 percent HAP by weight.

(3) Use a control system with an overall control efficiency (R) such that the value of  $E_{ac}$  in Equation 4 is no greater than 0.8.

$R = [(E_{bc} - E_{ac}) / E_{bc}] (100)$  Equation 4

The value of  $E_{bc}$  in Equation 4 shall be calculated using Equation 1; or

(4) Use any combination of an averaging approach, as described in (d)(1), compliant finishing materials, as described in (d)(2), and a control system, as described in (d)(3).

(e) The owner or operator of a new affected source subject to § 63.802(b)(2)

shall comply with the provisions using either of the following methods:

(1) Use compliant contact adhesives with a VHAP content no greater than 0.2 kg VHAP/kg solids (0.2 lb VHAP/lb solids), as applied; or

(2) Use a control system with an overall control efficiency (R) such that the value of  $G_{ac}$  in Equation 3 is no greater than 0.2.

(f) *Initial compliance.* (1) Owners or operators of an affected source subject to the provisions of § 63.802 (a)(1) or (b)(1) that comply through the procedures established in § 63.804 (a)(1) or (d)(1) shall submit the results of the averaging calculation (Equation 1) for the first month with the initial compliance status report required by § 63.807(b). The first month's calculation shall include data for the entire month in which the compliance date falls. For example, if the source's compliance date is November 21, 1997, the averaging calculation shall include data from November 1, 1997 to November 30, 1997.

(2) Owners or operators of an affected source subject to the provisions of § 63.802 (a)(1) or (b)(1) that comply through the procedures established in § 63.804 (a)(2) or (d)(2) shall submit an initial compliance status report, as required by § 63.807(b), stating that compliant stains, washcoats, sealers, topcoats, basecoats, enamels, and thinners, as applicable, are being used by the affected source.

(3) Owners or operators of an affected source subject to the provisions of § 63.802 (a)(1) or (b)(1) that are complying through the procedures established in § 63.804 (a)(2) or (d)(2) and are applying coatings using continuous coaters shall demonstrate initial compliance by:

(i) Submitting an initial compliance status report, as required by § 63.807(b), stating that compliant coatings, as determined by the VHAP content of the coating in the reservoir and the VHAP content as calculated from records, and compliant thinners are being used; or

(ii) Submitting an initial compliance status report, as required by § 63.807(b), stating that compliant coatings, as determined by the VHAP content of the coating in the reservoir, are being used; the viscosity of the coating in the

reservoir is being monitored; and compliant thinners are being used. The affected source shall also submit data that demonstrate that viscosity is an appropriate parameter for demonstrating compliance.

(4) Owners or operators of an affected source subject to the provisions of §63.802 (a)(1) or (b)(1) that comply through the procedures established in §63.804 (a)(3) or (d)(3) shall demonstrate initial compliance by:

(i) Submitting a monitoring plan that identifies each operating parameter to be monitored for the capture device and discusses why each parameter is appropriate for demonstrating continuous compliance;

(ii) Conducting an initial performance test as required under §63.7 using the procedures and test methods listed in §63.7 and §63.805 (c) and (d) or (e);

(iii) Calculating the overall control efficiency (R) following the procedures in §63.805 (d) or (e); and

(iv) Determining those operating conditions critical to determining compliance and establishing one or more operating parameters that will ensure compliance with the standard.

(A) For compliance with a thermal incinerator, minimum combustion temperature shall be the operating parameter.

(B) For compliance with a catalytic incinerator equipped with a fixed catalyst bed, the minimum gas temperature both upstream and downstream of the catalyst bed shall be the operating parameter.

(C) For compliance with a catalytic incinerator equipped with a fluidized catalyst bed, the minimum gas temperature upstream of the catalyst bed and the pressure drop across the catalyst bed shall be the operating parameters.

(D) For compliance with a carbon adsorber, the operating parameters shall be the total regeneration mass stream flow for each regeneration cycle and the carbon bed temperature after each regeneration, or the concentration level of organic compounds exiting the adsorber, unless the owner or operator requests and receives approval from the Administrator to establish other operating parameters.

(E) For compliance with a control device not listed in this section, one or more operating parameter values shall be established using the procedures identified in §63.804(g)(4)(vi).

(v) Owners or operators complying with §63.804(f)(4) shall calculate each site-specific operating parameter value as the arithmetic average of the maximum or minimum operating parameter values, as appropriate, that demonstrate compliance with the standards, during the three test runs required by §63.805(c)(1).

(5) Owners or operators of an affected source subject to the provisions of §63.802 (a)(2) or (b)(2) that comply through the procedures established in §63.804 (b), (c)(1), or (e)(1), shall submit an initial compliance status report, as required by §63.807(b), stating that compliant contact adhesives are being used by the affected source.

(6) Owners or operators of an affected source subject to the provisions of §63.802 (a)(2)(ii) or (b)(2) that comply through the procedures established in §63.804 (c)(2) or (e)(2), shall demonstrate initial compliance by:

(i) Submitting a monitoring plan that identifies each operating parameter to be monitored for the capture device and discusses why each parameter is appropriate for demonstrating continuous compliance;

(ii) Conducting an initial performance test as required under §63.7 using the procedures and test methods listed in §63.7 and §63.805 (c) and (d) or (e);

(iii) Calculating the overall control efficiency (R) following the procedures in §63.805 (d) or (e); and

(iv) Determining those operating conditions critical to determining compliance and establishing one or more operating parameters that will ensure compliance with the standard.

(A) For compliance with a thermal incinerator, minimum combustion temperature shall be the operating parameter.

(B) For compliance with a catalytic incinerator equipped with a fixed catalyst bed, the minimum gas temperature both upstream and downstream of the catalyst shall be the operating parameter.

(C) For compliance with a catalytic incinerator equipped with a fluidized

catalyst bed, the minimum gas temperature upstream of the catalyst bed and the pressure drop across the catalyst bed shall be the operating parameters.

(v) Owners or operators complying with § 63.804(f)(6) shall calculate each site-specific operating parameter value as the arithmetic average of the maximum or minimum operating values as appropriate, that demonstrate compliance with the standards, during the three test runs required by § 63.805(c)(1).

(7) Owners or operators of an affected source subject to the provisions of § 63.802 (a)(3) or (b)(3) shall submit an initial compliance status report, as required by § 63.807(b), stating that compliant strippable spray booth coatings are being used by the affected source.

(8) Owners or operators of an affected source subject to the work practice standards in § 63.803 shall submit an initial compliance status report, as required by § 63.807(b), stating that the work practice implementation plan has been developed and procedures have been established for implementing the provisions of the plan.

(g) *Continuous compliance demonstrations.* (1) Owners or operators of an affected source subject to the provisions of § 63.802 (a)(1) or (b)(1) that comply through the procedures established in § 63.804 (a)(1) or (d)(1) shall demonstrate continuous compliance by submitting the results of the averaging calculation (Equation 1) for each month within that semiannual period and submitting a compliance certification with the semiannual report required by § 63.807(c).

(i) The compliance certification shall state that the value of (E), as calculated by Equation 1, is no greater than 1.0 for existing sources or 0.8 for new sources. An affected source is in violation of the standard if E is greater than 1.0 for existing sources or 0.8 for new sources for any month. A violation of the monthly average is a separate violation of the standard for each day of operation during the month, unless the affected source can demonstrate through records that the violation of the monthly average can be attributed to a particular day or days during the period.

(ii) The compliance certification shall be signed by a responsible official of the company that owns or operates the affected source.

(2) Owners or operators of an affected source subject to the provisions of § 63.802 (a)(1) or (b)(1) that comply through the procedures established in § 63.804 (a)(2) or (d)(2) shall demonstrate continuous compliance by using compliant coatings and thinners, maintaining records that demonstrate the coatings and thinners are compliant, and submitting a compliance certification with the semiannual report required by § 63.807(c).

(i) The compliance certification shall state that compliant stains, washcoats, sealers, topcoats, basecoats, enamels, and thinners, as applicable, have been used each day in the semiannual reporting period or should otherwise identify the periods of noncompliance and the reasons for noncompliance. An affected source is in violation of the standard whenever a noncompliant coating, as demonstrated by records or by a sample of the coating, is used.

(ii) The compliance certification shall be signed by a responsible official of the company that owns or operates the affected source.

(3) Owners or operators of an affected source subject to the provisions of § 63.802 (a)(1) or (b)(1) that are complying through the procedures established in § 63.804 (a)(2) or (d)(2) and are applying coatings using continuous coaters shall demonstrate continuous compliance by following the procedures in paragraph (g)(3) (i) or (ii) of this section.

(i) Using compliant coatings, as determined by the VHAP content of the coating in the reservoir and the VHAP content as calculated from records, using compliant thinners, and submitting a compliance certification with the semiannual report required by § 63.807(c).

(A) The compliance certification shall state that compliant coatings have been used each day in the semiannual reporting period, or should otherwise identify the days of noncompliance and the reasons for noncompliance. An affected source is in violation of the standard whenever a noncompliant coating, as determined by records

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or by a sample of the coating, is used. Use of a noncompliant coating is a separate violation for each day the non-compliant coating is used.

(B) The compliance certification shall be signed by a responsible official of the company that owns or operates the affected source.

(ii) Using compliant coatings, as determined by the VHAP content of the coating in the reservoir, using compliant thinners, maintaining a viscosity of the coating in the reservoir that is no less than the viscosity of the initial coating by monitoring the viscosity with a viscosity meter or by testing the viscosity of the initial coating and retesting the coating in the reservoir each time solvent is added, maintaining records of solvent additions, and submitting a compliance certification with the semiannual report required by § 63.807(c).

(A) The compliance certification shall state that compliant coatings, as determined by the VHAP content of the coating in the reservoir, have been used each day in the semiannual reporting period. Additionally, the certification shall state that the viscosity of the coating in the reservoir has not been less than the viscosity of the initial coating, that is, the coating that is initially mixed and placed in the reservoir, for any day in the semiannual reporting period.

(B) The compliance certification shall be signed by a responsible official of the company that owns or operates the affected source.

(C) An affected source is in violation of the standard when a sample of the as-applied coating exceeds the applicable limit established in § 63.804 (a)(2) or (d)(2), as determined using EPA Method 311, or the viscosity of the coating in the reservoir is less than the viscosity of the initial coating.

(4) Owners or operators of an affected source subject to the provisions of § 63.802 (a)(1) or (b)(1) that comply through the procedures established in § 63.804 (a)(3) or (d)(3) shall demonstrate continuous compliance by installing, calibrating, maintaining, and operating the appropriate monitoring equipment according to manufacturer's specifications. The owner or operator shall also submit the excess emissions

and continuous monitoring system performance report and summary report required by § 63.807(d) and § 63.10(e) of subpart A.

(i) Where a capture/control device is used, a device to monitor each site-specific operating parameter established in accordance with § 63.804(f)(6)(i) is required.

(ii) Where an incinerator is used, a temperature monitoring device equipped with a continuous recorder is required.

(A) Where a thermal incinerator is used, a temperature monitoring device shall be installed in the firebox or in the ductwork immediately downstream of the firebox in a position before any substantial heat exchange occurs.

(B) Where a catalytic incinerator equipped with a fixed catalyst bed is used, temperature monitoring devices shall be installed in the gas stream immediately before and after the catalyst bed.

(C) Where a catalytic incinerator equipped with a fluidized catalyst bed is used, a temperature monitoring device shall be installed in the gas stream immediately before the bed. In addition, a pressure monitoring device shall be installed to determine the pressure drop across the catalyst bed. The pressure drop shall be measured monthly at a constant flow rate.

(iii) Where a carbon adsorber is used one of the following is required:

(A) An integrating stream flow monitoring device having an accuracy of  $\pm 10$  percent, capable of recording the total regeneration stream mass flow for each regeneration cycle; and a carbon bed temperature monitoring device, having an accuracy of  $\pm 1$  percent of the temperature being monitored or  $\pm 0.5$  °C, whichever is greater, and capable of recording the carbon bed temperature after each regeneration and within 15 minutes of completing any cooling cycle;

(B) An organic monitoring device, equipped with a continuous recorder, to indicate the concentration level of organic compounds exiting the carbon adsorber; or

(C) Any other monitoring device that has been approved by the Administrator in accordance with § 63.804(f)(4)(iv)(D).

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(iv) Owners or operators of an affected source shall not operate the capture or control device at a daily average value greater than or less than (as appropriate) the operating parameter values. The daily average value shall be calculated as the average of all values for a monitored parameter recorded during the operating day.

(v) Owners or operators of an affected source that are complying through the use of a catalytic incinerator equipped with a fluidized catalyst bed shall maintain a constant pressure drop, measured monthly, across the catalyst bed.

(vi) An owner or operator who uses a control device not listed in § 63.804(f)(4) shall submit, for the Administrator's approval, a description of the device, test data verifying performance, and appropriate site-specific operating parameters that will be monitored to demonstrate continuous compliance with the standard.

(5) Owners or operators of an affected source subject to the provisions of § 63.802 (a)(2) (i) or (ii) or (b)(2) that comply through the procedures established in § 63.804 (b), (c)(1), or (e)(1), shall submit a compliance certification with the semiannual report required by § 63.807(c).

(i) The compliance certification shall state that compliant contact and/or foam adhesives have been used each day in the semiannual reporting period, or should otherwise identify each day noncompliant contact and/or foam adhesives were used. Each day a noncompliant contact or foam adhesive is used is a single violation of the standard.

(ii) The compliance certification shall be signed by a responsible official of the company that owns or operates the affected source.

(6) Owners or operators of an affected source subject to the provisions of § 63.802 (a)(2)(ii) or (b)(2) that comply through the procedures established in § 63.804 (c)(2) or (e)(2), shall demonstrate continuous compliance by installing, calibrating, maintaining, and operating the appropriate monitoring equipment according to the manufacturer's specifications. The owner or operator shall also submit the excess emissions and continuous monitoring system performance report and summary report required by § 63.807(d) and § 63.10(e) of subpart A of this part.

(i) Where a capture/control device is used, a device to monitor each site-specific operating parameter established in accordance with § 63.804(f)(6)(i) is required.

(ii) Where an incinerator is used, a temperature monitoring device equipped with a continuous recorder is required.

(A) Where a thermal incinerator is used, a temperature monitoring device shall be installed in the firebox or in the ductwork immediately downstream of the firebox in a position before any substantial heat exchange occurs.

(B) Where a catalytic incinerator equipped with a fixed catalyst bed is used, temperature monitoring devices shall be installed in the gas stream immediately before and after the catalyst bed.

(C) Where a catalytic incinerator equipped with a fluidized catalyst bed is used, a temperature monitoring device shall be installed in the gas stream immediately before the bed. In addition, a pressure monitoring device shall be installed to measure the pressure drop across the catalyst bed. The pressure drop shall be measured monthly at a constant flow rate.

(iii) Where a carbon adsorber is used one of the following is required:

(A) An integrating stream flow monitoring device having an accuracy of  $\pm 10$  percent, capable of recording the total regeneration stream mass flow for each regeneration cycle; and a carbon bed temperature monitoring device, having an accuracy of  $\pm 1$  percent of the temperature being monitored or  $\pm 0.5$  °C, whichever is greater, and capable of recording the carbon bed temperature after each regeneration and within 15 minutes of completing any cooling cycle;

(B) An organic monitoring device, equipped with a continuous recorder, to indicate the concentration level of organic compounds exiting the carbon adsorber; or

(C) Any other monitoring device that has been approved by the Administrator in accordance with § 63.804(f)(4)(iv)(D).

(iv) Owners or operators of an affected source shall not operate the capture or control device at a daily average value greater than or less than (as appropriate) the operating parameter values. The daily average value shall be calculated as the average of all values for a monitored parameter recorded during the operating day.

(v) Owners or operators of an affected source that are complying through the use of a catalytic incinerator equipped with a fluidized catalyst bed shall maintain a constant pressure drop, measured monthly, across the catalyst bed.

(vi) An owner or operator using a control device not listed in this section shall submit to the Administrator a description of the device, test data verifying the performance of the device, and appropriate operating parameter values that will be monitored to demonstrate continuous compliance with the standard. Compliance using this device is subject to the Administrator's approval.

(7) Owners or operators of an affected source subject to the provisions of § 63.802 (a)(3) or (b)(3) shall submit a compliance certification with the semi-annual report required by § 63.807(c).

(i) The compliance certification shall state that compliant strippable spray booth coatings have been used each day in the semiannual reporting period, or should otherwise identify each day noncompliant materials were used. Each day a noncompliant strippable booth coating is used is a single violation of the standard.

(ii) The compliance certification shall be signed by a responsible official of the company that owns or operates the affected source.

(8) Owners or operators of an affected source subject to the work practice standards in § 63.803 shall submit a compliance certification with the semi-annual report required by § 63.807(c).

(i) The compliance certification shall state that the work practice implementation plan is being followed, or should otherwise identify the provisions of the plan that have not been implemented and each day the provisions were not implemented. During any period of time that an owner or operator is required to implement the provisions of the plan, each failure to implement an obligation under the plan during any particular day is a violation.

(ii) The compliance certification shall be signed by a responsible official of the company that owns or operates the affected source.

**§ 63.805 Performance test methods.**

(a) The EPA Method 311 of appendix A of part 63 shall be used in conjunction with formulation data to determine the VHAP content of the liquid coating. Formulation data shall be used to identify VHAP present in the coating. The EPA Method 311 shall then be used to quantify those VHAP identified through formulation data. The EPA Method 311 shall not be used to quantify HAP such as styrene and formaldehyde that are emitted during the cure. The EPA Method 24 (40 CFR part 60, appendix A) shall be used to determine the solids content by weight and the density of coatings. If it is demonstrated to the satisfaction of the Administrator that a coating does not release VOC or HAP byproducts during the cure, for example, all VOC and HAP present in the coating is solvent, then batch formulation information shall be accepted. The owner or operator of an affected source may request approval from the Administrator to use an alternative method for determining the VHAP content of the coating. In the event of any inconsistency between the EPA Method 24 or Method 311 test data and a facility's formulation data, that is, if the EPA Method 24/311 value is higher, the EPA Method 24/311 test shall govern unless after consultation, a regulated source could demonstrate to the satisfaction of the enforcement agency that the formulation data were correct. Sampling procedures shall follow the guidelines presented in "Standard Procedures for Collection of Coating and Ink Samples for VOC Content Analysis by Reference Method 24 and Reference Method 24A," EPA-340/1-91-010. (Docket No. A-93-10, Item No. IV-A-1).

(b) Owners or operators demonstrating compliance in accordance with § 63.804 (f)(4) or (f)(6) and § 63.804 (g)(4) or (g)(6), or complying with any of the other emission limits of § 63.802 by operating a capture or control device shall determine the overall control efficiency of the control system (R) as the product of the capture and control device efficiency, using the test methods cited in § 63.805(c) and the procedures in § 63.805 (d) or (e).

(c) When an initial compliance demonstration is required by § 63.804 (f)(4)

or (f)(6) of this subpart, the procedures in paragraphs (c)(1) through (c)(6) of this section shall be used in determining initial compliance with the provisions of this subpart.

(1) The EPA Method 18 (40 CFR part 60, appendix A) shall be used to determine the HAP concentration of gaseous air streams. The test shall consist of three separate runs, each lasting a minimum of 30 minutes.

(2) The EPA Method 1 or 1A (40 CFR part 60, appendix A) shall be used for sample and velocity traverses.

(3) The EPA Method 2, 2A, 2C, or 2D (40 CFR part 60, appendix A) shall be used to measure velocity and volumetric flow rates.

(4) The EPA Method 3 (40 CFR part 60, appendix A) shall be used to analyze the exhaust gases.

(5) The EPA Method 4 (40 CFR part 60, appendix A) shall be used to measure the moisture in the stack gas.

(6) The EPA Methods 2, 2A, 2C, 2D, 3, and 4 shall be performed, as applicable, at least twice during each test period.

(d) Each owner or operator of an affected source demonstrating compliance in accordance with § 63.804 (f)(4) or (f)(6) shall perform a gaseous emission test using the following procedures:

(1) Construct the overall HAP emission reduction system so that all volumetric flow rates and total HAP emissions can be accurately determined by the applicable test methods specified in § 63.805(c) (1) through (6);

(2) Determine capture efficiency from the affected emission point(s) by capturing, venting, and measuring all HAP emissions from the affected emission point(s). During a performance test, the owner or operator shall isolate affected emission point(s) located in an area with other nonaffected gaseous emission sources from all other gaseous emission point(s) by any of the following methods:

(i) Build a temporary total enclosure (see § 63.801) around the affected emission point(s); or

(ii) Use the building that houses the process as the enclosure (see § 63.801);

(iii) Use any alternative protocol and test method provided they meet either the requirements of the data quality objective (DQO) approach or the lower

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confidence level (LCL) approach (see §63.801);

(iv) Shut down all nonaffected HAP emission point(s) and continue to exhaust fugitive emissions from the affected emission point(s) through any building ventilation system and other room exhausts such as drying ovens. All exhaust air must be vented through stacks suitable for testing; or

(v) Use another methodology approved by the Administrator provided

it complies with the EPA criteria for acceptance under part 63, appendix A, Method 301.

(3) Operate the control device with all affected emission points that will subsequently be delivered to the control device connected and operating at maximum production rate;

(4) Determine the efficiency (F) of the control device using the following equation:

$$F = \frac{\sum_{i=1}^n Q_{bi} C_{bi} - \sum_{j=1}^p Q_{aj} C_{aj}}{\sum_{i=1}^n Q_{bi} C_{bi}} \quad \text{(Equation 5)}$$

(5) Determine the efficiency (N) of the capture system using the following equation:

$$N = \frac{\sum_{i=1}^n Q_{di} C_{di}}{\sum_{i=1}^n Q_{di} C_{di} + \sum_{k=1}^p Q_{fk} C_{fk}} \quad \text{(Equation 6)}$$

(6) For each affected source complying with §63.802(a)(1) in accordance with §63.804(a)(3), compliance is demonstrated if the product of (F×N)(100) yields a value (R) such that the value of E<sub>ac</sub> in Equation 2 is no greater than 1.0.

(7) For each new affected source complying with §63.802(b)(1) in accordance with §63.804(d)(3), compliance is demonstrated if the product of (F×N)(100) yields a value (R) such that the value of E<sub>ac</sub> in Equation 4 is no greater than 0.8.

(8) For each affected source complying with §63.802(a)(2)(ii) in accordance with §63.804(c)(2), compliance is demonstrated if the product of (F×N)(100) yields a value (R) such that the value of G<sub>ac</sub> in Equation 3 is no greater than 1.0.

(9) For each new affected source complying with §63.802(b)(2) in accordance with §63.804(e)(2), compliance is demonstrated if the product of (F×N)(100) yields a value (R) such that the value of G<sub>ac</sub> in Equation 3 is no greater than 0.2.

(e) An alternative method to the compliance method in §63.805(d) is the installation of a permanent total enclosure around the affected emission point(s). A permanent total enclosure presents prima facie evidence that all HAP emissions from the affected emission point(s) are directed to the control device. Each affected source that complies using a permanent total enclosure shall:

(1) Demonstrate that the total enclosure meets the requirements in paragraphs (e)(1) (i) through (iv). The owner

or operator of an enclosure that does not meet these requirements may apply to the Administrator for approval of the enclosure as a total enclosure on a case-by-case basis. The enclosure shall be considered a total enclosure if it is demonstrated to the satisfaction of the Administrator that all HAP emissions from the affected emission point(s) are contained and vented to the control device. The requirements for automatic approval are as follows:

(i) The total area of all natural draft openings shall not exceed 5 percent of the total surface area of the total enclosure's walls, floor, and ceiling;

(ii) All sources of emissions within the enclosure shall be a minimum of

four equivalent diameters away from each natural draft opening;

(iii) The average inward face velocity (FV) across all natural draft openings shall be a minimum of 3,600 meters per hour as determined by the following procedures:

(A) All forced makeup air ducts and all exhaust ducts are constructed so that the volumetric flow rate in each can be accurately determined by the test methods specified in §63.805 (c)(2) and (3). Volumetric flow rates shall be calculated without the adjustment normally made for moisture content; and

(B) Determine FV by the following equation:

$$FV = \frac{\sum_{j=1}^n Q_{out j} - \sum_{i=1}^p Q_{in i}}{\sum_{k=1}^q A_k} \quad \text{(Equation 7)}$$

(iv) All access doors and windows whose areas are not included as natural draft openings and are not included in the calculation of FV shall be closed during routine operation of the process.

(2) Determine the control device efficiency using Equation (5), and the test methods and procedures specified in §63.805 (c)(1) through (6).

(3) For each affected source complying with §63.802(a)(1) in accordance with §63.804(a)(3), compliance is demonstrated if:

(i) The installation of a permanent total enclosure is demonstrated (N=1);

(ii) The value of F is determined from Equation (5); and

(iii) The product of (F×N)(100) yields a value (R) such that the value of E<sub>ac</sub> in Equation 2 is no greater than 1.0.

(4) For each new affected source complying with §63.802(b)(1) in accordance with §63.804(d)(3), compliance is demonstrated if:

(i) The installation of a permanent total enclosure is demonstrated (N = 1);

(ii) The value of F is determined from Equation (5); and

(iii) The product of (F×N)(100) yields a value (R) such that the value of E<sub>ac</sub> in Equation 4 is no greater than 0.8.

(5) For each affected source complying with §63.802(a)(2)(ii) in accordance with §63.804(c)(2), compliance is demonstrated if:

(i) The installation of a permanent total enclosure is demonstrated (N=1);

(ii) The value of F is determined from Equation (5); and

(iii) The product of (F×N)(100) yields a value (R) such that the value of G<sub>ac</sub> in Equation 3 is no greater than 1.0.

(6) For each new affected source complying with §63.802(b)(2) in accordance with §63.804(e)(2), compliance is demonstrated if:

(i) The installation of a permanent total enclosure is demonstrated (N=1);

(ii) The value of F is determined from Equation (5); and

(iii) The product of (F×N)(100) yields a value (R) such that the value of G<sub>ac</sub> in Equation 3 is no greater than 0.2.

**§ 63.806 Recordkeeping requirements.**

(a) The owner or operator of an affected source subject to this subpart shall fulfill all recordkeeping requirements of § 63.10 of subpart A, according to the applicability criteria in § 63.800(d) of this subpart.

(b) The owner or operator of an affected source subject to the emission limits in § 63.802 of this subpart shall maintain records of the following:

(1) A certified product data sheet for each finishing material, thinner, contact adhesive, and strippable spray booth coating subject to the emission limits in § 63.802; and

(2) The VHAP content, in kg VHAP/kg solids (lb VHAP/lb solids), as applied, of each finishing material and contact adhesive subject to the emission limits in § 63.802; and

(3) The VOC content, in kg VOC/kg solids (lb VOC/lb solids), as applied, of each strippable booth coating subject to the emission limits in § 63.802 (a)(3) or (b)(3).

(c) The owner or operator of an affected source following the compliance method in § 63.804 (a)(1) or (d)(1) shall maintain copies of the averaging calculation for each month following the compliance date, as well as the data on the quantity of coatings and thinners used that is necessary to support the calculation of E in Equation 1.

(d) The owner or operator of an affected source following the compliance procedures of § 63.804 (f)(3)(ii) and (g)(3)(ii) shall maintain the records required by § 63.806(b) as well as records of the following:

(1) Solvent and coating additions to the continuous coater reservoir;

(2) Viscosity measurements; and

(3) Data demonstrating that viscosity is an appropriate parameter for demonstrating compliance.

(e) The owner or operator of an affected source subject to the work practice standards in § 63.803 of this subpart shall maintain onsite the work practice implementation plan and all records associated with fulfilling the requirements of that plan, including, but not limited to:

(1) Records demonstrating that the operator training program required by § 63.803(b) is in place;

(2) Records collected in accordance with the inspection and maintenance plan required by § 63.803(c);

(3) Records associated with the cleaning solvent accounting system required by § 63.803(d);

(4) Records associated with the limitation on the use of conventional air spray guns showing total finishing material usage and the percentage of finishing materials applied with conventional air spray guns for each semi-annual period as required by § 63.803(h)(5).

(5) Records associated with the formulation assessment plan required by § 63.803(l); and

(6) Copies of documentation such as logs developed to demonstrate that the other provisions of the work practice implementation plan are followed.

(f) The owner or operator of an affected source following the compliance method of § 63.804 (f)(4) or (g)(4) shall maintain copies of the calculations demonstrating that the overall control efficiency (R) of the control system results in the value of  $E_{ac}$  required by Equations 2 or 4, records of the operating parameter values, and copies of the semiannual compliance reports required by § 63.807(d).

(g) The owner or operator of an affected source following the compliance method of § 63.804 (f)(6) or (g)(6), shall maintain copies of the calculations demonstrating that the overall control efficiency (R) of the control system results in the applicable value of  $G_{ac}$  calculated using Equation 3, records of the operating parameter values, and copies of the semiannual compliance reports required by § 63.807(d).

(h) The owner or operator of an affected source subject to the emission limits in § 63.802 and following the compliance provisions of § 63.804(f) (1), (2), (3), (5), (7) and (8) and § 63.804(g) (1), (2), (3), (5), (7), and (8) shall maintain records of the compliance certifications submitted in accordance with § 63.807(c) for each semiannual period following the compliance date.

(i) The owner or operator of an affected source shall maintain records of all other information submitted with the compliance status report required by § 63.9(h) and § 63.807(b) and the semiannual reports required by § 63.807(c).

(j) The owner or operator of an affected source shall maintain all records in accordance with the requirements of §63.10(b)(1).

**§63.807 Reporting requirements.**

(a) The owner or operator of an affected source subject to this subpart shall fulfill all reporting requirements of §63.7 through §63.10 of subpart A (General Provisions) according to the applicability criteria in §63.800(d) of this subpart.

(b) The owner or operator of an affected source demonstrating compliance in accordance with §63.804(f) (1), (2), (3), (5), (7) and (8) shall submit the compliance status report required by §63.9(h) of subpart A (General Provisions) no later than 60 days after the compliance date. The report shall include the information required by §63.804(f) (1), (2), (3), (5), (7), and (8) of this subpart.

(c) The owner or operator of an affected source demonstrating compliance in accordance with §63.804(g) (1), (2), (3), (5), (7), and (8) shall submit a report covering the previous 6 months of wood furniture manufacturing operations:

(1) The first report shall be submitted 30 calendar days after the end of the first 6-month period following the compliance date.

(2) Subsequent reports shall be submitted 30 calendar days after the end of each 6-month period following the first report.

(3) The semiannual reports shall include the information required by §63.804(g) (1), (2), (3), (5), (7), and (8), a statement of whether the affected source was in compliance or non-compliance, and, if the affected source was in noncompliance, the measures taken to bring the affected source into compliance.

(4) The frequency of the reports required by paragraph (c) of this section

shall not be reduced from semiannually regardless of the history of the owner's or operator's compliance status.

(d) The owner or operator of an affected source demonstrating compliance in accordance with §63.804(g) (4) and (6) of this subpart shall submit the excess emissions and continuous monitoring system performance report and summary report required by §63.10(e) of subpart A. The report shall include the monitored operating parameter values required by §63.804(g) (4) and (6). If the source experiences excess emissions, the report shall be submitted quarterly for at least 1 year after the excess emissions occur and until a request to reduce reporting frequency is approved, as indicated in §63.10(e)(3)(C). If no excess emissions occur, the report shall be submitted semiannually.

(e) The owner or operator of an affected source required to provide a written notification under §63.803(1)(4) shall include in the notification one or more statements that explains the reasons for the usage increase. The notification shall be submitted no later than 30 calendar days after the end of the annual period in which the usage increase occurred.

**§63.808 Delegation of authority.**

(a) In delegating implementation and enforcement authority to a State under §112(d) of the Clean Air Act, the authorities contained in paragraph (b) of this section shall be retained by the Administrator and not transferred to a State.

(b) The authority conferred in §63.804(f)(4)(iv) (D) and (E), §63.804(g)(4)(iii)(C), §63.804(g)(4)(vi), §63.804(g)(6)(vi), §63.805(a), §63.805(d)(2)(V), and §63.805(e)(1) shall not be delegated to any State.

**§§63.809–63.819 [Reserved]**

TABLES TO SUBPART JJ TO PART 63

TABLE 1.—GENERAL PROVISIONS APPLICABILITY TO SUBPART JJ

| Reference        | Applies to subpart JJ | Comment                                     |
|------------------|-----------------------|---|
| 63.1(a) .....    | Yes                   |   |
| 63.1(b)(1) ..... | No .....              | Subpart JJ specifies applicability.         |
| 63.1(b)(2) ..... | Yes                   |   |
| 63.1(b)(3) ..... | Yes                   |   |
| 63.1(c)(1) ..... | No .....              | Subpart JJ specifies applicability.         |
| 63.1(c)(2) ..... | No .....              | Area sources are not subject to subpart JJ. |

TABLE 1.—GENERAL PROVISIONS APPLICABILITY TO SUBPART JJ—Continued

| Reference           | Applies to subpart JJ | Comment  |
|---------------------|-----------------------|--|
| 63.1(c)(4)          | Yes                   |  |
| 63.1(c)(5)          | Yes                   |  |
| 63.1(e)             | Yes                   |  |
| 63.2                | Yes                   | Additional terms are defined in 63.801(a) of subpart JJ. When overlap between subparts A and JJ occurs, subpart JJ takes precedence.   |
| 63.3                | Yes                   | Other units used in subpart JJ are defined in 63.801(b).   |
| 63.4                | Yes                   |  |
| 63.5                | Yes                   |  |
| 63.6(a)             | Yes                   |  |
| 63.6(b)(1)          | Yes                   |  |
| 63.6(b)(2)          | Yes                   |  |
| 63.6(b)(3)          | Yes                   |  |
| 63.6(b)(4)          | No                    | May apply when standards are proposed under Section 112(f) of the CAA.   |
| 63.6(b)(5)          | Yes                   |  |
| 63.6(b)(7)          | Yes                   |  |
| 63.6(c)(1)          | Yes                   |  |
| 63.6(c)(2)          | No                    |  |
| 63.6(c)(5)          | Yes                   |  |
| 63.6(e)(1)          | Yes                   |  |
| 63.6(e)(2)          | Yes                   |  |
| 63.6(e)(3)          | Yes                   | Applies only to affected sources using a control device to comply with the rule.   |
| 63.6(f)(1)          | No                    | Affected sources complying through the procedures specified in 63.804 (a)(1), (a)(2), (b), (c)(1), (d)(1), (d)(2), (e)(1), and (e)(2) are subject to the emission standards at all times, including periods of startup, shutdown, and malfunction. |
| 63.6(f)(2)          | Yes                   |  |
| 63.6(f)(3)          | Yes                   |  |
| 63.6(g)             | Yes                   |  |
| 63.6(h)             | No                    |  |
| 63.6 (i)(1)–(i)(3)  | Yes                   |  |
| 63.6(i)(4)(i)       | Yes                   |  |
| 63.6(i)(4)(ii)      | No                    |  |
| 63.6 (i)(5)–(i)(14) | Yes                   |  |
| 63.6(i)(16)         | Yes                   |  |
| 63.6(j)             | Yes                   |  |
| 63.7                | Yes                   | Applies only to affected sources using a control device to comply with the rule.   |
| 63.8                | Yes                   | Applies only to affected sources using a control device to comply with the rule.   |
| 63.9(a)             | Yes                   |  |
| 63.9(b)             | Yes                   | Existing sources are required to submit initial notification report within 270 days of the effective date.   |
| 63.9(c)             | Yes                   |  |
| 63.9(d)             | Yes                   |  |
| 63.9(e)             | Yes                   | Applies only to affected sources using a control device to comply with the rule.   |
| 63.9(f)             | No                    |  |
| 63.9(g)             | Yes                   | Applies only to affected sources using a control device to comply with the rule.   |
| 63.9(h)             | Yes                   | 63.9(h)(2)(ii) applies only to affected sources using a control device to comply with the rule.  |
| 63.9(i)             | Yes                   |  |
| 63.9(j)             | Yes                   |  |
| 63.10(a)            | Yes                   |  |
| 63.10(b)(1)         | Yes                   |  |
| 63.10(b)(2)         | Yes                   | Applies only to affected sources using a control device to comply with the rule.   |
| 63.10(b)(3)         | Yes                   |  |
| 63.10(c)            | Yes                   |  |
| 63.10(d)(1)         | Yes                   |  |
| 63.10(d)(2)         | Yes                   | Applies only to affected sources using a control device to comply with the rule.   |
| 63.10(d)(3)         | No                    |  |
| 63.10(d)(4)         | Yes                   |  |
| 63.10(d)(5)         | Yes                   | Applies only to affected sources using a control device to comply with the rule.   |
| 63.10(e)            | Yes                   | Applies only to affected sources using a control device to comply with the rule.   |
| 63.10(f)            | Yes                   |  |
| 63.11               | No                    |  |
| 63.12–63.15         | Yes                   |  |

TABLE 2.—LIST OF VOLATILE HAZARDOUS AIR POLLUTANTS

| Chemical name | CAS No. |
|---------------|---------|
| Acetaldehyde  | 75070   |

TABLE 2.—LIST OF VOLATILE HAZARDOUS AIR POLLUTANTS—Continued

| Chemical name | CAS No. |
|---------------|---------|
| Acetamide     | 60355   |

TABLE 2.—LIST OF VOLATILE HAZARDOUS AIR POLLUTANTS—Continued

| Chemical name  | CAS No. |
|--|---------|
| Acetonitrile   | 75058   |
| Acetophenone   | 98862   |
| 2-Acetylaminofluorene  | 53963   |
| Acrolein   | 107028  |
| Acrylamide   | 79061   |
| Acrylic acid   | 79107   |
| Acrylonitrile  | 107131  |
| Allyl chloride   | 107051  |
| 4-Aminobiphenyl  | 92671   |
| Aniline  | 62533   |
| o-Anisidine  | 90040   |
| Benzene  | 71432   |
| Benzidine  | 92875   |
| Benzotrichloride   | 98077   |
| Benzyl chloride  | 100447  |
| Biphenyl   | 92524   |
| Bis(2-ethylhexyl) phthalate (DEHP)                                 | 117817  |
| Bis(chloromethyl) ether  | 542881  |
| Bromoform  | 75252   |
| 1,3-Butadiene  | 106990  |
| Caprolactam  | 105602  |
| Carbon disulfide   | 75150   |
| Carbon tetrachloride   | 56235   |
| Carbonyl sulfide   | 463581  |
| Catechol   | 120809  |
| Chloroacetic acid  | 79118   |
| 2-Chloroacetophenone   | 532274  |
| Chlorobenzene  | 108907  |
| Chloroform   | 67663   |
| Chloromethyl methyl ether  | 107302  |
| Chloroprene  | 126998  |
| Cresols (isomers and mixture)                                      | 1319773 |
| o-Cresol   | 95487   |
| m-Cresol   | 108394  |
| p-Cresol   | 106445  |
| Cumene   | 98828   |
| 2,4-D (2,4-Dichlorophenoxyacetic acid, including salts and esters) | 94757   |
| DDE (1,1-Dichloro-2,2-bis (p-chlorophenyl) ethylene)               | 72559   |
| Diazomethane   | 334883  |
| Dibenzofuran   | 132649  |
| 1,2-Dibromo-3-chloropropane  | 96128   |
| Dibutylphthalate   | 84742   |
| 1,4-Dichlorobenzene  | 106467  |
| 3,3'-Dichlorobenzidine   | 91941   |
| Dichloroethyl ether (Bis (2-chloroethyl) ether)                    | 111444  |
| 1,3-Dichloropropene  | 542756  |
| Diethanolamine   | 111422  |
| N,N-Dimethylaniline  | 121697  |
| Diethyl sulfate  | 64675   |
| 3,3'-Dimethoxybenzidine  | 119904  |
| 4-Dimethylaminoazobenzene  | 60117   |
| 3,3'-Dimethylbenzidine   | 119937  |
| Dimethylcarbamoyl chloride   | 79447   |
| N,N-Dimethylformamide  | 68122   |
| 1,1-Dimethylhydrazine  | 57147   |
| Dimethyl phthalate   | 131113  |
| Dimethyl sulfate   | 77781   |
| 4,6-Dinitro-o-cresol, and salts                                    | 51285   |
| 2,4-Dinitrophenol  | 121142  |
| 2,4-Dinitrotoluene   | 123911  |
| 1,4-Dioxane (1,4-Diethyleneoxide)                                  | 122667  |
| 1,2-Diphenylhydrazine  | 106898  |
| Epichlorohydrin (1-Chloro-2,3-epoxypropane)                        | 106887  |
| 1,2-Epoxybutane  | 140885  |
| Ethyl acrylate   | 100414  |
| Ethylbenzene   | 51796   |
| Ethyl carbamate (Urethane)   | 75003   |
| Ethyl chloride (Chloroethane)                                      | 106934  |
| Ethylene dibromide (Dibromoethane)                                 |         |

TABLE 2.—LIST OF VOLATILE HAZARDOUS AIR POLLUTANTS—Continued

| Chemical name                              | CAS No. |
|--|---------|
| Ethylene dichloride (1,2-Dichloroethane)   | 107062  |
| Ethylene glycol                            | 107211  |
| Ethylene oxide                             | 75218   |
| Ethylenethiourea                           | 96457   |
| Ethylidene dichloride (1,1-Dichloroethane) | 75343   |
| Formaldehyde                               | 50000   |
| Glycol ethers                              | 0       |
| Hexachlorobenzene                          | 118741  |
| Hexachloro-1,3-butadiene                   | 87683   |
| Hexachloroethane                           | 67721   |
| Hexamethylene-1,6-diisocyanate             | 822060  |
| Hexamethylphosphoramide                    | 680319  |
| Hexane                                     | 110543  |
| Hydrazine                                  | 302012  |
| Hydroquinone                               | 123319  |
| Isophorone                                 | 78591   |
| Maleic anhydride                           | 108316  |
| Methanol                                   | 67561   |
| Methyl bromide (Bromomethane)              | 74839   |
| Methyl chloride (Chloromethane)            | 74873   |
| Methyl chloroform (1,1,1-Trichloroethane)  | 71556   |
| Methyl ethyl ketone (2-Butanone)           | 78933   |
| Methylhydrazine                            | 60344   |
| Methyl iodide (Iodomethane)                | 74884   |
| Methyl isobutyl ketone (Hexone)            | 108101  |
| Methyl isocyanate                          | 624839  |
| Methyl methacrylate                        | 80626   |
| Methyl tert-butyl ether                    | 1634044 |
| 4,4'-Methylenebis (2-chloroaniline)        | 101144  |
| Methylene chloride (Dichloromethane)       | 75092   |
| 4,4'-Methylenediphenyl diisocyanate (MDI)  | 101688  |
| 4,4'-Methylenedianiline                    | 101779  |
| Naphthalene                                | 91203   |
| Nitrobenzene                               | 98953   |
| 4-Nitrobiphenyl                            | 92933   |
| 4-Nitrophenol                              | 100027  |
| 2-Nitropropane                             | 79469   |
| N-Nitroso-N-methylurea                     | 684935  |
| N-Nitrosodimethylamine                     | 62759   |
| N-Nitrosomorpholine                        | 59892   |
| Phenol                                     | 108952  |
| p-Phenylenediamine                         | 106503  |
| Phosgene                                   | 75445   |
| Phthalic anhydride                         | 85449   |
| Polychlorinated biphenyls (Aroclors)       | 1336363 |
| Polycyclic Organic Matter <sup>b</sup>     | 0       |
| 1,3-Propane sultone                        | 1120714 |
| beta-Propiolactone                         | 57578   |
| Propionaldehyde                            | 123386  |
| Propoxur (Baygon)                          | 114261  |
| Propylene dichloride (1,2-Dichloropropane) | 78875   |
| Propylene oxide                            | 75569   |
| 1,2-Propylenimine (2-Methyl aziridine)     | 75558   |
| Quinone                                    | 106514  |
| Styrene                                    | 100425  |
| Styrene oxide                              | 96093   |
| 2,3,7,8-Tetrachlorodibenzo-p-dioxin        | 1746016 |
| 1,1,2,2-Tetrachloroethane                  | 79345   |
| Tetrachloroethylene (Perchloroethylene)    | 127184  |
| Toluene                                    | 108883  |
| 2,4-Toluenediamine                         | 95807   |
| Toluene-2,4-diisocyanate                   | 584849  |
| o-Toluidine                                | 95534   |
| 1,2,4-Trichlorobenzene                     | 120821  |
| 1,1,2-Trichloroethane                      | 79005   |
| Trichloroethylene                          | 79016   |
| 2,4,5-Trichlorophenol                      | 95954   |
| 2,4,6-Trichlorophenol                      | 88062   |
| Triethylamine                              | 121448  |
| Trifluralin                                | 1582098 |
| 2,2,4-Trimethylpentane                     | 540841  |

TABLE 2.—LIST OF VOLATILE HAZARDOUS AIR POLLUTANTS—Continued

| Chemical name                                    | CAS No. |
|--|---------|
| Vinyl acetate .....                              | 108054  |
| Vinyl bromide .....                              | 593602  |
| Vinyl chloride .....                             | 75014   |
| Vinylidene chloride (1,1-Dichloroethylene) ..... | 75354   |
| Xylenes (isomers and mixture) .....              | 1330207 |
| o-Xylene .....                                   | 95476   |
| m-Xylene .....                                   | 108383  |
| p-Xylene .....                                   | 106423  |

<sup>a</sup>Includes mono- and di-ethers of ethylene glycol, diethylene glycols and triethylene glycol; R-(OCH<sub>2</sub>CH<sub>2</sub>)<sub>n</sub>RR-OR where:

n = 1, 2, or 3,  
R = alkyl or aryl groups  
R' = R, H, or groups which, when removed, yield glycol ethers with the structure: R-(OCH<sub>2</sub>CH<sub>2</sub>)<sub>n</sub>-OH. Polymers are excluded from the glycol category.

<sup>b</sup>Includes organic compounds with more than one benzene ring, and which have a boiling point greater than or equal to 100°C.

TABLE 3.—SUMMARY OF EMISSION LIMITS

| Emission point  | Existing source    | New source         |
|---|--------------------|--------------------|
| <b>Finishing Operations:</b>  |                    |                    |
| (a) Achieve a weighted average VHAP content across all coatings (maximum kg VHAP/kg solids [lb VHAP/lb solids], as applied) .....     | <sup>a</sup> 1.0   | <sup>a</sup> 0.8   |
| (b) Use compliant finishing materials (maximum kg VHAP/kg solids [lb VHAP/lb solids], as applied):                                    |                    |                    |
| —stains .....   | <sup>a</sup> 1.0   | <sup>a</sup> 1.0   |
| —washcoats .....  | <sup>a,b</sup> 1.0 | <sup>a,b</sup> 0.8 |
| —sealers .....  | <sup>a</sup> 1.0   | <sup>a</sup> 0.8   |
| —topcoats .....   | <sup>a</sup> 1.0   | <sup>a</sup> 0.8   |
| —basecoats .....  | <sup>a,b</sup> 1.0 | <sup>a,b</sup> 0.8 |
| —enamels .....  | <sup>a,b</sup> 1.0 | <sup>a,b</sup> 0.8 |
| —thinners (maximum % HAP allowable); or .....   | 10.0               | 10.0               |
| (c) As an alternative, use control device; or .....   | <sup>c</sup> 1.0   | <sup>c</sup> 0.8   |
| (d) Use any combination of (a), (b), and (c) .....  | 1.0                | 0.8                |
| <b>Cleaning Operations:</b>   |                    |                    |
| Strippable spray booth material (maximum VOC content, kg VOC/kg solids [lb VOC/lb solids]) ...  | 0.8                | 0.8                |
| <b>Contact Adhesives:</b>   |                    |                    |
| (a) Use compliant contact adhesives (maximum kg VHAP/kg solids [lb VHAP/lb solids], as applied) based on following criteria:          |                    |                    |
| i. For aerosol adhesives, and for contact adhesives applied to nonporous substrates .....   | <sup>d</sup> NA    | <sup>d</sup> NA    |
| ii. For foam adhesives used in products that meet flammability requirements .....   | 1.8                | 0.2                |
| iii. For all other contact adhesives (including foam adhesives used in products that do not meet flammability requirements); or ..... | 1.0                | 0.2                |
| (b) Use a control device .....  | <sup>e</sup> 1.0   | <sup>e</sup> 0.2   |

<sup>a</sup>The limits refer to the VHAP content of the coating, as applied.  
<sup>b</sup>Washcoats, basecoats, and enamels must comply with the limits presented in this table if they are purchased premade, that is, if they are not formulated onsite by thinning other finishing materials. If they are formulated onsite, they must be formulated using compliant finishing materials, i.e., those that meet the limits specified in this table, and thinners containing no more than 3.0 percent HAP by weight.  
<sup>c</sup>The control device must operate at an efficiency that is equivalent to no greater than 1.0 kilogram (or 0.8 kilogram) of VHAP being emitted from the affected emission source per kilogram of solids used.  
<sup>d</sup>There is no limit on the VHAP content of these adhesives.  
<sup>e</sup>The control device must operate at an efficiency that is equivalent to no greater than 1.0 kilogram (or 0.2 kilogram) of VHAP being emitted from the affected emission source per kilogram of solids used.

TABLE 4.—POLLUTANTS EXCLUDED FROM USE IN CLEANING AND WASHOFF SOLVENTS

| Chemical name                             | CAS No. |
|---|---------|
| 4-Aminobiphenyl .....                     | 92671   |
| Styrene oxide .....                       | 96093   |
| Diethyl sulfate .....                     | 64675   |
| N-Nitrosomorpholine .....                 | 59892   |
| Dimethyl formamide .....                  | 68122   |
| Hexamethylphosphoramide .....             | 680319  |
| Acetamide .....                           | 60355   |
| 4,4'-Methylenedianiline .....             | 101779  |
| o-Anisidine .....                         | 90040   |
| 2,3,7,8-Tetrachlorodibenzo-p-dioxin ..... | 1746016 |
| Beryllium salts .....                     |         |
| Benzidine .....                           | 92875   |
| N-Nitroso-N-methylurea .....              | 684935  |
| Bis(chloromethyl)ether .....              | 542881  |
| Dimethyl carbamoyl chloride .....         | 79447   |

TABLE 4.—POLLUTANTS EXCLUDED FROM USE IN CLEANING AND WASHOFF SOLVENTS—Continued

| Chemical name                                 | CAS No.  |
|---|----------|
| Chromium compounds (hexavalent) .....         |          |
| 1,2-Propylenimine (2-Methyl aziridine) .....  | 75558    |
| Arsenic and inorganic arsenic compounds ..... | 99999904 |
| Hydrazine .....                               | 302012   |
| 1,1-Dimethyl hydrazine .....                  | 57147    |
| Beryllium compounds .....                     | 7440417  |
| 1,2-Dibromo-3-chloropropane .....             | 96128    |
| N-Nitrosodimethylamine .....                  | 62759    |
| Cadmium compounds .....                       |          |
| Benzo (a) pyrene .....                        | 50328    |
| Polychlorinated biphenyls (Aroclors) .....    | 1336363  |
| Heptachlor .....                              | 76448    |
| 3,3'-Dimethyl benzidine .....                 | 119937   |

TABLE 4.—POLLUTANTS EXCLUDED FROM USE IN CLEANING AND WASHOFF SOLVENTS—Continued

| Chemical name                                 | CAS No.  |
|---|----------|
| Nickel subsulfide                             | 12035722 |
| Acrylamide                                    | 79061    |
| Hexachlorobenzene                             | 118741   |
| Chlordane                                     | 57749    |
| 1,3-Propane sultone                           | 1120714  |
| 1,3-Butadiene                                 | 106990   |
| Nickel refinery dust                          |          |
| 2-Acetylaminoflourine                         | 53963    |
| 3,3'-Dichlorobenzidine                        | 53963    |
| Lindane (hexachlorocyclohexane, gamma)        | 58899    |
| 2,4-Toluene diamine                           | 95807    |
| Dichloroethyl ether (Bis(2-chloroethyl)ether) | 111444   |
| 1,2-Diphenylhydrazine                         | 122667   |
| Toxaphene (chlorinated camphene)              | 8001352  |
| 2,4-Dinitrotoluene                            | 121142   |
| 3,3'-Dimethoxybenzidine                       | 119904   |
| Formaldehyde                                  | 50000    |
| 4,4'-Methylene bis(2-chloroaniline)           | 101144   |
| Acrylonitrile                                 | 107131   |
| Ethylene dibromide(1,2-Dibromoethane)         | 106934   |
| DDE (1,1-p-chlorophenyl 1-2 dichloroethylene) | 72559    |
| Chlorobenzilate                               | 510156   |
| Dichlorvos                                    | 62737    |
| Vinyl chloride                                | 75014    |
| Coke Oven Emissions                           | 9999908  |
| Ethylene oxide                                | 75218    |
| Ethylene thiourea                             | 96457    |
| Vinyl bromide (bromoethene)                   | 593602   |
| Selenium sulfide (mono and di)                | 7488564  |
| Chloroform                                    | 67663    |
| Pentachlorophenol                             | 87865    |
| Ethyl carbamate (Urethane)                    | 51796    |
| Ethylene dichloride (1,2-Dichloroethane)      | 107062   |
| Propylene dichloride (1,2-Dichloropropane)    | 78875    |
| Carbon tetrachloride                          | 56235    |
| Benzene                                       | 71432    |
| Methyl hydrazine                              | 60344    |
| Ethyl acrylate                                | 140885   |
| Propylene oxide                               | 75569    |
| Aniline                                       | 62533    |
| 1,4-Dichlorobenzene(p)                        | 106467   |
| 2,4,6-Trichlorophenol                         | 88062    |
| Bis(2-ethylhexyl)phthalate (DEHP)             | 117817   |
| o-Toluidine                                   | 95534    |
| Propoxur                                      | 114261   |
| Trichloroethylene                             | 79016    |
| 1,4-Dioxane (1,4-Diethyleneoxide)             | 123911   |
| Acetaldehyde                                  | 75070    |
| Bromoform                                     | 75252    |
| Captan  | 133062   |
| Epichlorohydrin                               | 106898   |
| Methylene chloride (Dichloromethane)          | 75092    |
| Tetrachloroethylene (Perchloroethylene)       | 127184   |
| Dibenz (ah) anthracene                        | 53703    |
| Chrysene                                      | 218019   |
| Dimethyl aminoazobenzene                      | 60117    |
| Benzo (a) anthracene                          | 56553    |
| Benzo (b) fluoranthene                        | 205992   |
| Antimony trioxide                             | 1309644  |
| 2-Nitropropane                                | 79469    |
| 1,3-Dichloropropene                           | 542756   |
| 7, 12-Dimethylbenz(a)anthracene               | 57976    |
| Benz(c)acridine                               | 225514   |
| Indeno(1,2,3-cd)pyrene                        | 193395   |
| 1,2:7,8-Dibenzopyrene                         | 189559   |

TABLE 5.—LIST OF VHAP OF POTENTIAL CONCERN IDENTIFIED BY INDUSTRY

| Chemical              | CAS No. | EPA de minimis, tons/yr |
|-----------------------|---------|-------------------------|
| Dimethyl formamide    | 68122   | 1.0                     |
| Formaldehyde          | 50000   | 0.2                     |
| Methylene chloride    | 75092   | 4.0                     |
| 2-Nitropropane        | 79469   | 1.0                     |
| Isophorone            | 78591   | 0.7                     |
| Styrene monomer       | 1000425 | 1.0                     |
| Phenol                | 108952  | 0.1                     |
| Diethanolamine        | 11422   | 5.0                     |
| 2-Methoxyethanol      | 109864  | 10.0                    |
| 2-Ethoxyethyl acetate | 111159  | 5.0                     |

TABLE 6.—VHAP OF POTENTIAL CONCERN

| CAS No.                          | Chemical name                                  |
|----------------------------------|--|
| <b>“Nonthreshold” Pollutants</b> |  |
| 92671                            | 4-Aminobiphenyl.                               |
| 96093                            | Styrene oxide.                                 |
| 64675                            | Diethyl sulfate.                               |
| 59892                            | N-Nitrosomorpholine.                           |
| 68122                            | Dimethyl formamide.                            |
| 80319                            | Hexamethylphosphoramide.                       |
| 60355                            | Acetamide.                                     |
| 101779                           | 4,4'-Methylenedianiline.                       |
| 90040                            | o-Anisidine.                                   |
| 1746016                          | 2,3,7,8-Tetrachlorodibenzo-p-dioxindioxin.     |
| 92875                            | Benzidine                                      |
| 684935                           | N-Nitroso-N-methylurea.                        |
| 542881                           | Bis(chloromethyl)ether.                        |
| 79447                            | Dimethyl carbamoyl chloride.                   |
| 75558                            | 1,2-Propylenimine (2-Methyl aziridine).        |
| 57147                            | 1,1-Dimethyl hydrazine.                        |
| 96128                            | 1,2-Dibromo-3-chloropropane.                   |
| 62759                            | N-Nitrosodimethylamine.                        |
| 50328                            | Benzo (a) pyrene.                              |
| 1336363                          | Polychlorinated biphenyls (Aroclors).          |
| 76448                            | Heptachlor.                                    |
| 119937                           | 3,3'-Dimethyl benzidine.                       |
| 79061                            | Acrylamide.                                    |
| 118741                           | Hexachlorobenzene.                             |
| 57749                            | Chlordane.                                     |
| 1120714                          | 1,3-Propane sultone.                           |
| 106990                           | 1,3-Butadiene.                                 |
| 53963                            | 2-Acetylaminoflourine.                         |
| 53963                            | 3,3'-Dichlorobenzidine.                        |
| 58899                            | Lindane (hexachlorocyclohexane, gamma).        |
| 95807                            | 2,4-Toluene diamine.                           |
| 111444                           | Dichloroethyl ether (Bis(2-chloroethyl)ether). |
| 122667                           | 1,2 - Diphenylhydrazine.                       |
| 8001352                          | Toxaphene (chlorinated camphene).              |
| 121142                           | 2,4-Dinitrotoluene.                            |
| 119904                           | 3,3'-Dimethoxybenzidine.                       |
| 50000                            | Formaldehyde.                                  |
| 101144                           | 4,4'-Methylene bis(2-chloroaniline).           |
| 107131                           | Acrylonitrile.                                 |
| 106934                           | Ethylene dibromide(1,2-Dibromoethane).         |
| 72559                            | DDE (1,1-p-chlorophenyl 1-2 dichloroethylene). |
| 510156                           | Chlorobenzilate.                               |
| 62737                            | Dichlorvos.                                    |
| 75014                            | Vinyl chloride.                                |
| 75218                            | Ethylene oxide.                                |
| 96457                            | Ethylene thiourea.                             |
| 593602                           | Vinyl bromide (bromoethene).                   |
| 67663                            | Chloroform.                                    |
| 87865                            | Pentachlorophenol.                             |
| 51796                            | Ethyl carbamate (Urethane).                    |

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TABLE 6.—VHAP OF POTENTIAL CONCERN—  
Continued

| CAS No. | Chemical name                                |
|---------|--|
| 107062  | Ethylene dichloride (1,2-Dichloroethane).    |
| 78875   | Propylene dichloride (1,2-Dichloropropane).  |
| 56235   | Carbon tetrachloride.                        |
| 71432   | Benzene.                                     |
| 140885  | Ethyl acrylate.                              |
| 75569   | Propylene oxide.                             |
| 62533   | Aniline.                                     |
| 106467  | 1,4-Dichlorobenzene(p).                      |
| 88062   | 2,4,6-Trichlorophenol.                       |
| 117817  | Bis(2-ethylhexyl)phthalate (DEHP).           |
| 95534   | o-Toluidine.                                 |
| 114261  | Propoxur.                                    |
| 79016   | Trichloroethylene.                           |
| 123911  | 1,4-Dioxane (1,4-Diethyleneoxide).           |
| 75070   | Acetaldehyde.                                |
| 75252   | Bromoform.                                   |
| 133062  | Captan.                                      |
| 106898  | Epichlorohydrin.                             |
| 75092   | Methylene chloride (Dichloromethane).        |
| 127184  | Tetrachloroethylene (Perchloroethylene).     |
| 53703   | Dibenz (ah) anthracene.                      |
| 218019  | Chrysene.                                    |
| 60117   | Dimethyl aminoazobenzene.                    |
| 56553   | Benzo (a) anthracene.                        |
| 205992  | Benzo (b) fluoranthene.                      |
| 79469   | 2-Nitropropane.                              |
| 542756  | 1,3-Dichloropropene.                         |
| 57976   | 7, 12-Dimethylbenz(a)anthracene.             |
| 225514  | Benz(c)acridine.                             |
| 193395  | Indeno(1,2,3-cd)pyrene.                      |
| 189559  | 1,2,7,8-Dibenzopyrene.                       |
| 79345   | 1,1,2,2-Tetrachloroethane.                   |
| 91225   | Quinoline.                                   |
| 75354   | Vinylidene chloride (1,1-Dichloroethylene).  |
| 87683   | Hexachlorobutadiene.                         |
| 82688   | Pentachloronitrobenzene (Quintobenzene).     |
| 78591   | Isophorone.                                  |
| 79005   | 1,1,2-Trichloroethane.                       |
| 74873   | Methyl chloride (Chloromethane).             |
| 67721   | Hexachloroethane.                            |
| 1582098 | Trifluralin.                                 |
| 1319773 | Cresols/Cresylic acid (isomers and mixture). |
| 108394  | m-Cresol.                                    |
| 75343   | Ethylidene dichloride (1,1-Dichloroethane).  |
| 95487   | o-Cresol.                                    |
| 106445  | p-Cresol.                                    |
| 74884   | Methyl iodide (Iodomethane).                 |
| 100425  | Styrene <sup>a</sup> .                       |
| 107051  | Allyl chloride.                              |
| 334883  | Diazomethane.                                |
| 95954   | 2,4,5 - Trichlorophenol.                     |
| 133904  | Chloramben.                                  |
| 106887  | 1,2 - Epoxybutane.                           |
| 108054  | Vinyl acetate.                               |
| 126998  | Chloroprene.                                 |
| 123319  | Hydroquinone.                                |
| 92933   | 4-Nitrobiphenyl                              |

“High-Concern” Pollutants

|          |                            |
|----------|----------------------------|
| 56382    | Parathion.                 |
| 13463393 | Nickel Carbonyl.           |
| 60344    | Methyl hydrazine.          |
| 75218    | Ethylene oxide.            |
| 151564   | Ethylene imine.            |
| 77781    | Dimethyl sulfate.          |
| 107302   | Chloromethyl methyl ether. |
| 57578    | beta-Propiolactone.        |
| 100447   | Benzyl chloride.           |
| 98077    | Benzo-trichloride.         |
| 107028   | Acrolein.                  |

TABLE 6.—VHAP OF POTENTIAL CONCERN—  
Continued

| CAS No.  | Chemical name                     |
|----------|-----------------------------------|
| 584849   | 2,4 - Toluene diisocyanate.       |
| 75741    | Tetramethyl lead.                 |
| 78002    | Tetraethyl lead.                  |
| 12108133 | Methylcyclopentadienyl manganese. |
| 624839   | Methyl isocyanate.                |
| 77474    | Hexachlorocyclopentadiene.        |
| 62207765 | Fluomine.                         |
| 10210681 | Cobalt carbonyl.                  |
| 79118    | Chloroacetic acid.                |
| 534521   | 4,6-Dinitro-o-cresol, and salts.  |
| 101688   | Methylene diphenyl diisocyanate.  |
| 108952   | Phenol.                           |
| 62384    | Mercury, (acetato-o) phenyl.      |
| 98862    | Acetophenone.                     |
| 108316   | Maleic anhydride.                 |
| 532274   | 2-Chloroacetophenone.             |
| 51285    | 2,4-Dinitrophenol.                |
| 108864   | 2-Methoxy ethanol.                |
| 98953    | Nitrobenzene.                     |
| 74839    | Methyl bromide (Bromomethane).    |
| 75150    | Carbon disulfide.                 |
| 121697   | N,N-Dimethylaniline.              |

“Unrankable” Pollutants

|        |  |
|--------|--|
| 106514 | Quinone.                               |
| 123386 | Propionaldehyde.                       |
| 120809 | Catechol.                              |
| 85449  | Phthalic anhydride.                    |
| 463581 | Carbonyl sulfide.                      |
| 132649 | Dibenzofurans.                         |
| 100027 | 4-Nitrophenol.                         |
| 540841 | 2,2,4-Trimethylpentane.                |
| 11422  | Diethanolamine.                        |
| 822060 | Hexamethylene-1,6-diisocyanate         |
|        | Glycol ethers <sup>b</sup>             |
|        | Polycyclic organic matter <sup>c</sup> |

\* = Currently an EPA weight of evidence classification is under review.

<sup>a</sup> The EPA does not currently have an official weight-of-evidence classification for styrene. For purposes of this rule, styrene is treated as a “nonthreshold” pollutant. (See data report form in appendix A of the hazard ranking technical background document.)

<sup>b</sup> Except for 2-ethoxy ethanol, ethylene glycol monobutyl ether, and 2-methoxy ethanol.

<sup>c</sup> Except for benzo(b)fluoranthene, benzo(a)anthracene, benzo(a)pyrene, 7,12-dimethylbenz(a)anthracene, benz(c)acridine, chrysene, dibenz(ah) anthracene, 1,2,7,8-dibenzopyrene, indeno(1,2,3-cd)pyrene, but including dioxins and furans.

Subpart KK—National Emission Standards for the Printing and Publishing Industry

SOURCE: 61 FR 27140, May 30, 1996, unless otherwise.

§ 63.820 Applicability.

(a) The provisions of this subpart apply to:

(1) Each new and existing facility that is a major source of hazardous air pollutants (HAP), as defined in 40 CFR 63.2, at which publication rotogravure,

product and packaging rotogravure, or wide-web flexographic printing presses are operated, and

(2) each new and existing facility at which publication rotogravure, product and packaging rotogravure, or wide-web flexographic printing presses are operated for which the owner or operator chooses to commit to, and meets the criteria of paragraphs (a)(2)(i) and (a)(2)(ii) of this section for purposes of establishing the facility to be an area source with respect to this subpart:

(i) Use less than 9.1 Mg (10 tons) per each rolling 12-month period of each HAP at the facility, including materials used for source categories or purposes other than printing and publishing, and

(ii) Use less than 22.7 Mg (25 tons) per each rolling 12-month period of any combination of HAP at the facility, including materials used for source categories or purposes other than printing and publishing.

(3) Each facility for which the owner or operator chooses to commit to and meets the criteria stated in paragraph (a)(2) of this section shall be considered an area source, and is subject only to the provisions of § 63.829(d) and § 63.830(b)(1) of this subpart.

(4) Each facility for which the owner or operator commits to the conditions in paragraph (a)(2) of this section may exclude material used in routine janitorial or facility grounds maintenance, personal uses by employees or other persons, the use of products for the purpose of maintaining electric, propane, gasoline and diesel powered motor vehicles operated by the facility, and the use of HAP contained in intake water (used for processing or noncontact cooling) or intake air (used either as compressed air or for combustion).

(5) Each facility for which the owner or operator commits to the conditions in paragraph (a)(2) of this section to become an area source, but subsequently exceeds either of the thresholds in paragraph (a)(2) of this section for any rolling 12-month period (without first obtaining and complying with other limits that keep its potential to emit HAP below major source levels), shall be considered in violation of its commitment for that 12-month period and

shall be considered a major source of HAP beginning the first month after the end of the 12-month period in which either of the HAP-use thresholds was exceeded. As a major source of HAP, each such facility would be subject to the provisions of this subpart as noted in paragraph (a)(1) of this section and would no longer be eligible to use the provisions of paragraph (a)(2) of this section, even if in subsequent 12-month periods the facility uses less HAP than the thresholds in paragraph (a)(2) of this section.

(6) An owner or operator of an affected source subject to paragraph (a)(2) of this section who chooses to no longer be subject to paragraph (a)(2) of this section shall notify the Administrator of such change. If, by no longer being subject to paragraph (a)(2) of this section, the facility at which the affected source is located becomes a major source:

(i) The owner or operator of an existing source must continue to comply with the HAP usage provisions of paragraph (a)(2) of this section until the source is in compliance with all relevant requirements for existing affected sources under this subpart;

(ii) The owner or operator of a new source must continue to comply with the HAP usage provisions of paragraph (a)(2) of this section until the source is in compliance with all relevant requirements for new affected sources under this subpart.

(7) Nothing in this paragraph is intended to preclude a facility from establishing area source status by limiting its potential to emit through other appropriate mechanisms that may be available through the permitting authority.

(b) This subpart does not apply to research or laboratory equipment.

**§ 63.821 Designation of affected sources.**

(a) The affected sources subject to this subpart are:

(1) All of the publication rotogravure presses and all affiliated equipment, including proof presses, cylinder and parts cleaners, ink and solvent mixing and storage equipment, and solvent recovery equipment at a facility.

(2) All of the product and packaging rotogravure or wide-web flexographic printing presses at a facility plus any other equipment at that facility which the owner or operator chooses to include in accordance with paragraph (a)(3) of this section, except

(i) Proof presses, and

(ii) Any product and packaging rotogravure or wide-web flexographic press which is used primarily for coating, laminating, or other operations which the owner or operator chooses to exclude, provided that

(A) The sum of the total mass of inks, coatings, varnishes, adhesives, primers, solvents, thinners, reducers, and other materials applied by the press using product and packaging rotogravure work stations and the total mass of inks, coatings, varnishes, adhesives, primers, solvents, thinners, reducers, and other materials applied by the press using wide-web flexographic print stations in each month never exceeds five weight-percent of the total mass of inks, coatings, varnishes, adhesives, primers, solvents, thinners, reducers, and other materials applied by the press in that month, including all inboard and outboard stations, and

(B) The owner or operator maintains records as required in § 63.829(f).

(3) The owner or operator of an affected source, as defined in paragraph (a)(2) of this section, may elect to include in that affected source stand-alone coating equipment subject to the following provisions:

(i) Stand-alone coating equipment meeting any of the criteria specified in this subparagraph is eligible for inclusion:

(A) The stand-alone coating equipment and one or more product and packaging rotogravure or wide-web flexographic presses are used to apply solids-containing materials to the same web or substrate, or

(B) The stand-alone coating equipment and one or more product and packaging rotogravure or wide-web flexographic presses apply a common solids-containing material, or

(C) A common control device is used to control organic HAP emissions from the stand-alone coating equipment and from one or more product and packag-

ing rotogravure or wide-web flexographic printing presses;

(ii) All eligible stand-alone coating equipment located at the facility is included in the affected source; and

(iii) No product and packaging rotogravure or wide-web flexographic presses are excluded from the affected source under the provisions of paragraph (a)(2)(ii) of this section.

(b) Each product and packaging rotogravure or wide-web flexographic printing affected source at a facility that is a major source of HAP, as defined in 40 CFR 63.2, that complies with the criteria of paragraphs (b)(1) or (b)(2) on and after the applicable compliance date as specified in § 63.826 of this subpart is subject only to the requirements of § 63.829(e) and § 63.830(b)(1) of this subpart.

(1) The owner or operator of the source applies no more than 500 kg per month, for every month, of inks, coatings, varnishes, adhesives, primers, solvents, thinners, reducers, and other materials on product and packaging rotogravure or wide-web flexographic printing presses, or

(2) The owner or operator of the source applies no more than 400 kg per month, for every month, of organic HAP on product and packaging rotogravure or wide-web flexographic printing presses.

(c) Each product and packaging rotogravure or wide-web flexographic printing affected source at a facility that is a major source of HAP, as defined in 40 CFR 63.2, that complies with neither the criterion of paragraph (b)(1) nor (b)(2) of this section in any month after the applicable compliance date as specified in § 63.826 of this subpart is, starting with that month, subject to all relevant requirements of this subpart and is no longer eligible to use the provisions of paragraph (b) of this section, even if in subsequent months the affected source does comply with the criteria of paragraphs (b)(1) or (b)(2) of this section.

#### § 63.822 Definitions.

(a) All terms used in this subpart that are not defined below have the meaning given to them in the CAA and in subpart A of this part.

*Always-controlled work station* means a work station associated with a dryer from which the exhaust is delivered to a control device, with no provision for the dryer exhaust to bypass the control device. Sampling lines for analyzers and relief valves needed for safety purposes are not considered bypass lines.

*Capture efficiency* means the fraction of all organic HAP emissions generated by a process that are delivered to a control device, expressed as a percentage.

*Capture system* means a hood, enclosed room, or other means of collecting organic HAP emissions into a closed-vent system that exhausts to a control device.

*Car-seal* means a seal that is placed on a device that is used to change the position of a valve or damper (e.g., from open to closed) in such a way that the position of the valve or damper cannot be changed without breaking the seal.

*Certified product data sheet (CPDS)* means documentation furnished by suppliers of inks, coatings, varnishes, adhesives, primers, solvents, and other materials or by an outside laboratory that provides the organic HAP content of these materials, by weight, measured using Method 311 of appendix A of this part 63 or an equivalent or alternative method (or formulation data as provided in §63.827(b)) and the solids content of these materials, by weight, determined in accordance with §63.827(c). The purpose of the CPDS is to assist the owner or operator in demonstrating compliance with the emission limitations presented in §§63.824-63.825.

*Coating operation* means the application of a uniform layer of material across the entire width of a substrate.

*Coating station* means a work station on which a coating operation is conducted.

*Control device* means a device such as a carbon adsorber or oxidizer which reduces the organic HAP in an exhaust gas by recovery or by destruction.

*Control device efficiency* means the ratio of organic HAP emissions recovered or destroyed by a control device to the total HAP emissions that are introduced into the control device, expressed as a percentage.

*Day* means a 24-consecutive-hour period.

*Facility* means all contiguous or adjoining property that is under common ownership or control, including properties that are separated only by a road or other public right-of-way.

*Flexographic press* means an unwind or feed section, a series of individual work stations, one or more of which is a flexographic print station, any dryers (including interstage dryers and overhead tunnel dryers) associated with the work stations, and a rewind, stack, or collection station. The work stations may be oriented vertically, horizontally, or around the circumference of a single large impression cylinder. Inboard and outboard work stations, including those employing any other technology, such as rotogravure, are included if they are capable of printing or coating on the same substrate.

*Flexographic print station* means a work station on which a flexographic printing operation is conducted. A flexographic print station includes a flexographic printing plate which is an image carrier made of rubber or other elastomeric material. The image (type and art) to be printed is raised above the printing plate.

*HAP applied* means the organic HAP content of all inks, coatings, varnishes, adhesives, primers, solvent, and other materials applied to a substrate by a product and packaging rotogravure or wide-web flexographic printing affected source.

*HAP used* means the organic HAP applied by a publication rotogravure printing affected source, including all organic HAP used for cleaning, parts washing, proof presses, and all organic HAP emitted during tank loading, ink mixing, and storage.

*Intermittently-controllable work station* means a work station associated with a dryer with provisions for the dryer exhaust to be delivered to or diverted from a control device depending on the position of a valve or damper. Sampling lines for analyzers and relief valves needed for safety purposes are not considered bypass lines.

*Month* means a calendar month or a prespecified period of 28 days to 35 days.

*Never-controlled work station* means a work station which is not equipped with provisions by which any emissions, including those in the exhaust from any associated dryer, may be delivered to a control device.

*Overall Organic HAP control efficiency* means the total efficiency of a control system, determined either by:

(1) The product of the capture efficiency and the control device efficiency or

(2) A liquid-liquid material balance.

*Print station* means a work station on which a printing operation is conducted.

*Printing operation* means the formation of words, designs, and pictures on a substrate other than fabric through the application of material to that substrate.

*Product and packaging rotogravure printing* means the production, on a rotogravure press, of any printed substrate not otherwise defined as publication rotogravure printing. This includes, but is not limited to, folding cartons, flexible packaging, labels and wrappers, gift wraps, wall and floor coverings, upholstery, decorative laminates, and tissue products.

*Proof press* means any device used only to check the quality of the image formation of rotogravure cylinders or flexographic plates, which prints only non-saleable items.

*Publication rotogravure printing* means the production, on a rotogravure press, of the following saleable paper products:

(1) Catalogues, including mail order and premium,

(2) Direct mail advertisements, including circulars, letters, pamphlets, cards, and printed envelopes,

(3) Display advertisements, including general posters, outdoor advertisements, car cards, window posters; counter and floor displays; point of purchase and other printed display material,

(4) Magazines,

(5) Miscellaneous advertisements, including brochures, pamphlets, catalog sheets, circular folders, announcements, package inserts, book jackets, market circulars, magazine inserts, and shopping news,

(6) Newspapers, magazine and comic supplements for newspapers, and preprinted newspaper inserts, including hi-fi and spectacolor rolls and sections,

(7) Periodicals, and

(8) Telephone and other directories, including business reference services.

*Research or laboratory equipment* means any equipment for which the primary purpose is to conduct research and development into new processes and products, where such equipment is operated under the close supervision of technically trained personnel and is not engaged in the manufacture of products for commercial sale in commerce, except in a de minimis manner.

*Rotogravure press* means an unwind or feed section, a series of one or more work stations, one or more of which is a rotogravure print station, any dryers associated with the work stations, and a rewind, stack, or collection section. Inboard and outboard work stations including those employing any other technology, such as flexography, are included if they are capable of printing or coating on the same substrate.

*Rotogravure print station* means a work station on which a rotogravure printing operation is conducted. A rotogravure print station includes a rotogravure cylinder and ink supply. The image (type and art) to be printed is etched or engraved below the surface of the rotogravure cylinder. On a rotogravure cylinder the printing image consists of millions of minute cells.

*Stand-alone coating equipment* means an unwind or feed section, a series of one or more coating stations and any associated dryers, and a rewind, stack or collection section that:

Is not part of a product and packaging rotogravure or wide-web flexographic press, and

Is used to conduct one or more coating operations on a substrate. Stand-alone coating equipment

May or may not process substrate that is also processed by a product and packaging rotogravure or wide-web flexographic press, apply solids-containing materials that are also applied by a product and packaging rotogravure or wide-web flexographic press, and utilize a control device that is also utilized by a product and packaging rotogravure or wide-web flexographic

press. Stand-alone coating equipment is sometimes referred to as "off-line" coating equipment.

*Wide-web flexographic press* means a flexographic press capable of printing substrates greater than 18 inches in width.

*Work station* means a unit on a roto-gravure or wide-web flexographic press where material is deposited onto a substrate.

(b) The symbols used in equations in this subpart are defined as follows:

(1)  $C_{ahi}$ =the monthly average, as-applied, organic HAP content of solids-containing material, i, expressed as a weight-fraction, kg/kg.

(2)  $C_{asi}$ =the monthly average, as applied, solids content, of solids-containing material, i, expressed as a weight-fraction, kg/kg.

(3)  $C_{hi}$ =the organic HAP content of ink or other solids-containing material, i, expressed as a weight-fraction, kg/kg.

(4)  $C_{hij}$ =the organic HAP content of solvent j, added to solids-containing material i, expressed as a weight-fraction, kg/kg.

(5)  $C_{hj}$ =the organic HAP content of solvent j, expressed as a weight-fraction, kg/kg.

(6)  $C_i$ =the organic volatile matter concentration in ppm, dry basis, of compound i in the vent gas, as determined by Method 25 or Method 25A.

(7)  $C_{si}$ =the solids content of ink or other material, i, expressed as a weight-fraction, kg/kg.

(8)  $C_{vi}$ =the volatile matter content of ink or other material, i, expressed as a weight-fraction, kg/kg.

(9) E=the organic volatile matter control efficiency of the control device, percent.

(10) F=the organic volatile matter capture efficiency of the capture system, percent.

(11)  $G_i$ =the mass fraction of each solids containing material, i, which was applied at 20 weight-percent or greater solids content, on an as-applied basis, kg/kg.

(12) H=the total monthly organic HAP applied, kg.

(13)  $H_a$ =the monthly allowable organic HAP emissions, kg.

(14)  $H_L$ =the monthly average, as-applied, organic HAP content of all sol-

ids-containing materials applied at less than 0.04 kg organic HAP per kg of material applied, kg/kg.

(15)  $H_s$ =the monthly average, as-applied, organic HAP to solids ratio, kg organic HAP/kg solids applied.

(16)  $H_{si}$ =the as-applied, organic HAP to solids ratio of material i.

(17)  $L$ =the mass organic HAP emission rate per mass of solids applied, kg/kg.

(18)  $M_{Bi}$ =the sum of the mass of solids-containing material, i, applied on intermittently-controllable work stations operating in bypass mode and the mass of solids-containing material, i, applied on never-controlled work stations, in a month, kg.

(19)  $M_{Bj}$ =the sum of the mass of solvent, thinner, reducer, diluent, or other non-solids-containing material, j, applied on intermittently-controllable work stations operating in bypass mode and the mass of solvent, thinner, reducer, diluent, or other non-solids-containing material, j, applied on never-controlled work stations, in a month, kg.

(20)  $M_{ci}$ =the sum of the mass of solids-containing material, i, applied on intermittently-controllable work stations operating in controlled mode and the mass of solids-containing material, i, applied on always-controlled work stations, in a month, kg.

(21)  $M_{cj}$ =the sum of the mass of solvent, thinner, reducer, diluent, or other non-solids-containing material, j, applied on intermittently-controllable work stations operating in controlled mode and the mass of solvent, thinner, reducer, diluent, or other non-solids-containing material, j, applied on always-controlled work stations in a month, kg.

(22)  $M_f$ =the total organic volatile matter mass flow rate, kg/h.

(23)  $M_{fi}$ =the organic volatile matter mass flow rate at the inlet to the control device, kg/h.

(24)  $M_{fo}$ =the organic volatile matter mass flow rate at the outlet of the control device, kg/h.

(25)  $M_{hu}$ =the mass of organic HAP used in a month, kg.

(26)  $M_i$ =the mass of ink or other material, i, applied in a month, kg.

(27)  $M_{ij}$ =the mass of solvent, thinner, reducer, diluent, or other non-solids-

containing material, j, added to solids-containing material, i, in a month, kg.

(28)  $M_{i,j}$ =the mass of solvent, thinner, reducer, diluent, or other non-solids-containing material, j, applied in a month, kg.

(29)  $M_{L,j}$ =the mass of solvent, thinner, reducer, diluent, or other non-solids-containing material, j, added to solids-containing materials which were applied at less than 20 weight-percent solids content, on an as-applied basis, in a month, kg.

(30)  $M_{v,r}$ =the mass of volatile matter recovered in a month, kg.

(31)  $M_{v,u}$ =the mass of volatile matter, including water, used in a month, kg.

(32)  $MW_i$ =the molecular weight of compound i in the vent gas, kg/kg-mol.

(33) n=the number of organic compounds in the vent gas.

(34) p=the number of different inks, coatings, varnishes, adhesives, primers, and other materials applied in a month.

(35) q=the number of different solvents, thinners, reducers, diluents, or other non-solids-containing materials applied in a month.

(36)  $Q_{sd}$ =the volumetric flow rate of gases entering or exiting the control device, as determined by Method 2, dscm/h.

(37) R=the overall organic HAP control efficiency, percent.

(38)  $R_e$ =the overall effective organic HAP control efficiency for publication rotogravure, percent.

(39)  $R_v$ =the organic volatile matter collection and recovery efficiency, percent.

(40) S=the mass organic HAP emission rate per mass of material applied, kg/kg.

(41) 0.0416=conversion factor for molar volume, kg-mol/m<sup>3</sup>(@ 293 K and 760 mmHg).

#### § 63.823 Standards: General.

Table 1 to this subpart provides cross references to the 40 CFR part 63, subpart A, general provisions, indicating the applicability of the general provisions requirements to this subpart KK.

#### § 63.824 Standards: Publication rotogravure printing.

(a) Each owner or operator of any publication rotogravure printing af-

ected source that is subject to the requirements of this subpart shall comply with these requirements on and after the compliance dates as specified in § 63.826 of this subpart.

(b) Each publication rotogravure affected source shall limit emissions of organic HAP to no more than eight percent of the total volatile matter used each month. The emission limitation may be achieved by overall control of at least 92 percent of organic HAP used, by substitution of non-HAP materials for organic HAP, or by a combination of capture and control technologies and substitution of materials. To demonstrate compliance, each owner or operator shall follow the procedure in paragraph (b)(1) of this section when emissions from the affected source are controlled by a solvent recovery device, the procedure in paragraph (b)(2) of this section when emissions from the affected source are controlled by an oxidizer, and the procedure in paragraph (b)(3) of this section when no control device is used.

(1) Each owner or operator using a solvent recovery device to control emissions shall demonstrate compliance by showing that the HAP emission limitation is achieved by following the procedures in either paragraph (b)(1)(i) or (b)(1)(ii) of this section:

(i) Perform a liquid-liquid material balance for each month as follows:

(A) Measure the mass of each ink, coating, varnish adhesive, primer, solvent, and other material used by the affected source during the month.

(B) Determine the organic HAP content of each ink, coating, varnish, adhesive, primer, solvent and other material used by the affected source during the month following the procedure in § 63.827(b)(1).

(C) Determine the volatile matter content, including water, of each ink, coating, varnish, adhesive, primer, solvent, and other material used by the affected source during the month following the procedure in § 63.827(c)(1).

(D) Install, calibrate, maintain and operate, according to the manufacturer's specifications, a device that indicates the cumulative amount of volatile matter recovered by the solvent recovery device on a monthly basis. The device shall be initially certified by the

manufacturer to be accurate to within ±2.0 percent.

(E) Measure the amount of volatile matter recovered for the month.

(F) Calculate the overall effective organic HAP control efficiency ( $R_e$ ) for the month using Equation 1:

$$R_e = (100) \frac{M_{vu} - M_{hu} + [(M_{vr})(M_{hu} / M_{vu})]}{M_{vu}} \quad \text{Eq 1}$$

For the purposes of this calculation, the mass fraction of organic HAP present in the recovered volatile matter is assumed to be equal to the mass fraction of organic HAP present in the volatile matter used.

(G) The affected source is in compliance for the month, if  $R_e$  is at least 92 percent each month.

(ii) Use continuous emission monitors, conduct an initial performance test of capture efficiency, and continuously monitor a site specific operating parameter to assure capture efficiency as specified in paragraphs (b)(1)(ii)(A) through (b)(1)(ii)(E) of this section:

(A) Install continuous emission monitors to determine the total organic volatile matter mass flow rate (e.g., by

determining the concentration of the vent gas in grams per cubic meter, and the volumetric flow rate in cubic meters per second, such that the total organic volatile matter mass flow rate in grams per second can be calculated and summed) at both the inlet to and the outlet from the control device, such that the percent control efficiency (E) of the control device can be calculated for each month.

(B) Determine the percent capture efficiency (F) of the capture system according to §63.827(e).

(C) Calculate the overall effective organic HAP control efficiency ( $R_e$ ) achieved for each month using Equation 2.

$$R_e = (100) \frac{M_{vu} - M_{hu} + [(E / 100) (F / 100) M_{hu}]}{M_{vu}} \quad \text{Eq 2}$$

(D) Install, calibrate, operate and maintain the instrumentation necessary to measure continuously the site-specific operating parameter established in accordance with §63.828(a)(5) whenever a publication rotogravure printing press is operated.

(E) The affected source is in compliance with the requirement for the month if  $R_e$  is at least 92 percent, and the capture device is operated at an average value greater than, or less than (as appropriate) the operating parameter value established in accordance with §63.828(a)(5) for each three-hour period.

(2) Each owner or operator using an oxidizer to control emissions shall demonstrate compliance by showing

that the HAP emission limitation is achieved by following the procedure in either paragraph (b)(2)(i) or (b)(2)(ii) of this section:

(i) Demonstrate initial compliance through performance tests and continuing compliance through continuous monitoring as follows:

(A) Determine the oxidizer destruction efficiency (E) using the procedure in §63.827(d).

(B) Determine the capture efficiency (F) using the procedure in §63.827(e).

(C) [Reserved]

(D) Calculate the overall effective organic HAP control efficiency ( $R_e$ ) achieved using Equation 2.

(E) The affected source is in initial compliance if  $R_e$  is at least 92 percent.

Demonstration of continuing compliance is achieved by continuous monitoring of an appropriate oxidizer operating parameter in accordance with §63.828(a)(4), and by continuous monitoring of an appropriate capture system monitoring parameter in accordance with §63.828(a)(5). The affected source is in continuing compliance if the capture device is operated at an average value greater than or less than (as appropriate) the operating parameter value established in accordance with §63.828(a)(5), and

(1) if an oxidizer other than a catalytic oxidizer is used, the average combustion temperature for all three-hour periods is greater than or equal to the average combustion temperature established under §63.827(d), or

(2) if a catalytic oxidizer is used, the average catalyst bed inlet temperature for all three-hour periods is greater than or equal to the average catalyst bed inlet temperature established in accordance with §63.827(d).

(ii) Use continuous emission monitors, conduct an initial performance test of capture efficiency, and continuously monitor a site specific operating parameter to assure capture efficiency in accordance with the requirements of paragraph (b)(1)(ii) of this section.

(3) To demonstrate compliance without the use of a control device, each owner or operator shall compare the mass of organic HAP used to the mass of volatile matter used each month, as specified in paragraphs (b)(3)(i) through (b)(3)(iv) of this section:

(i) Measure the mass of each ink, coating, varnish adhesive, primer, solvent, and other material used in the affected source during the month,

(ii) Determine the organic HAP content of each ink, coating, varnish, adhesive, primer, solvent, and other material used during the month following the procedure in §63.827(b)(1), and

(iii) Determine the volatile matter content, including water, of each ink, coating, varnish, adhesive, primer, solvent, and other material used during the month following the procedure in §63.827(c)(1).

(iv) The affected source is in compliance for the month if the mass of organic HAP used does not exceed eight

percent of the mass of volatile matter used.

**§63.825 Standards: Product and packaging rotogravure and wide-web flexographic printing.**

(a) Each owner or operator of any product and packaging rotogravure or wide-web flexographic printing affected source that is subject to the requirements of this subpart shall comply with these requirements on and after the compliance dates as specified in §63.826 of this subpart.

(b) Each product and packaging rotogravure or wide-web flexographic printing affected source shall limit emissions to no more than five percent of the organic HAP applied for the month; or to no more than four percent of the mass of inks, coatings, varnishes, adhesives, primers, solvents, reducers, thinners, and other materials applied for the month; or to no more than 20 percent of the mass of solids applied for the month; or to a calculated equivalent allowable mass based on the organic HAP and solids contents of the inks, coatings, varnishes, adhesives, primers, solvents, reducers, thinners, and other materials applied for the month. The owner or operator of each product and packaging rotogravure or wide-web flexographic printing affected source shall demonstrate compliance with this standard by following one of the procedures in paragraphs (b)(1) through (b)(10) of this section:

(1) Demonstrate that each ink, coating, varnish, adhesive, primer, solvent, diluent, reducer, thinner, and other material applied during the month contains no more than 0.04 weight-fraction organic HAP, on an as-purchased basis, as determined in accordance with §63.827(b)(2).

(2) Demonstrate that each ink, coating, varnish, adhesive, primer, and other solids-containing material applied during the month contains no more than 0.04 weight-fraction organic HAP, on a monthly average as-applied basis as determined in accordance with paragraphs (b)(2)(i)–(ii) of this section. The owner or operator shall calculate the as-applied HAP content of materials which are reduced, thinned, or diluted prior to application, as follows:

(i) Determine the organic HAP content of each ink, coating, varnish, adhesive, primer, solvent, diluent, reducer, thinner, and other material applied on an as-purchased basis in accordance with §63.827(b)(2).

(ii) Calculate the monthly average as-applied organic HAP content,  $C_{ahi}$  of each ink, coating, varnish, adhesive, primer, and other solids-containing material using Equation 3.

$$C_{ahi} = \frac{\left( C_{hi}M_i + \sum_{j=1}^q C_{hij}M_{ij} \right)}{M_i + \sum_{j=1}^q M_{ij}} \quad \text{Eq 3}$$

(3)(i) Demonstrate that each ink, coating, varnish, adhesive, primer, and other solids-containing material applied, either

(A) Contains no more than 0.04 weight-fraction organic HAP on a monthly average as-applied basis, or

(B) Contains no more than 0.20 kg of organic HAP per kg of solids applied, on a monthly average as-applied basis.

(ii) The owner or operator may demonstrate compliance in accordance with paragraphs (b)(3)(ii) (A)-(C) of this section.

(A) Use the procedures of paragraph (b)(2) of this section to determine which materials meet the requirements of paragraph (b)(3)(i)(A) of this section.

(B) Determine the as-applied solids content following the procedure in §63.827(c)(2) of all materials which do not meet the requirements of paragraph (b)(3)(i)(A) of this section. The owner or operator may calculate the monthly average as-applied solids content of materials which are reduced, thinned, or diluted prior to application, using Equation 4, and

$$C_{asi} = \frac{C_{si}M_i}{M_i + \sum_{j=1}^q M_{ij}} \quad \text{Eq 4}$$

(C) Calculate the as-applied organic HAP to solids ratio,  $H_{si}$ , for all materials which do not meet the requirements of paragraph (b)(3)(i)(A) of this section, using Equation 5.

$$H_{si} = \frac{C_{ahi}}{C_{asi}} \quad \text{Eq 5}$$

(4) Demonstrate that the monthly average as-applied organic HAP content,  $H_L$ , of all materials applied is less than 0.04 kg HAP per kg of material applied, as determined by Equation 6.

$$H_L = \frac{\sum_{i=1}^p M_i C_{hi} + \sum_{j=1}^q M_j C_{hj}}{\sum_{i=1}^p M_i + \sum_{j=1}^q M_j} \quad \text{Eq 6}$$

(5) Demonstrate that the monthly average as-applied organic HAP content on the basis of solids applied,  $H_s$ , is less than 0.20 kg HAP per kg solids applied as determined by Equation 7.

$$H_s = \frac{\sum_{i=1}^p M_i C_{hi} + \sum_{j=1}^q M_j C_{hj}}{\sum_{i=1}^p M_i C_{si}} \quad \text{Eq 7}$$

(6) Demonstrate that the total monthly organic HAP applied,  $H$ , as determined by Equation 8, is less than the calculated equivalent allowable organic HAP,  $H_a$ , as determined by paragraph (e) of this section.

$$H = \sum_{i=1}^p M_i C_{hi} + \sum_{j=1}^q M_j C_{hj} \quad \text{Eq 8}$$

(7) Operate a capture system and control device and demonstrate an overall organic HAP control efficiency of at least 95 percent for each month. If the affected source operates more than one capture system or more than one control device, and has only always-controlled work stations, then the owner or operator shall demonstrate compliance in accordance with the provisions of either paragraph (f) or (h) of this section. If the affected source operates one or more never-controlled work stations or one or more intermittently-controllable work stations, then the owner or operator shall demonstrate compliance in accordance with the provisions of paragraph (f) of this section.

Otherwise, the owner or operator shall demonstrate compliance in accordance with the procedure in paragraph (c) of this section when emissions from the affected source are controlled by a solvent recovery device or the procedure in paragraph (d) of this section when emissions are controlled by an oxidizer.

(8) Operate a capture system and control device and limit the organic HAP emission rate to no more than 0.20 kg organic HAP emitted per kg solids applied as determined on a monthly average as-applied basis. If the affected source operates more than one capture system, more than one control device, one or more never-controlled work stations, or one or more intermittently-controllable work stations, then the owner or operator shall demonstrate compliance in accordance with the provisions of paragraph (f) of this section. Otherwise, the owner or operator shall demonstrate compliance following the procedure in paragraph (c) of this section when emissions from the affected source are controlled by a solvent recovery device or the procedure in paragraph (d) of this section when emissions are controlled by an oxidizer.

(9) Operate a capture system and control device and limit the organic HAP emission rate to no more than 0.04 kg organic HAP emitted per kg material applied as determined on a monthly average as-applied basis. If the affected source operates more than one capture system, more than one control device, one or more never-controlled work stations, or one or more intermittently-controllable work stations, then the owner or operator shall demonstrate compliance in accordance with the provisions of paragraph (f) of this section. Otherwise, the owner or operator shall demonstrate compliance following the procedure in paragraph (c) of this section when emissions from the affected source are controlled by a solvent recovery device or the procedure in paragraph (d) of this section when emissions are controlled by an oxidizer.

(10) Operate a capture system and control device and limit the monthly organic HAP emissions to less than the allowable emissions as calculated in accordance with paragraph (e) of this section. If the affected source operates more than one capture system, more

than one control device, one or more never-controlled work stations, or one or more intermittently-controllable work stations, then the owner or operator shall demonstrate compliance in accordance with the provisions of paragraph (f) of this section. Otherwise, the owner or operator shall demonstrate compliance following the procedure in paragraph (c) of this section when emissions from the affected source are controlled by a solvent recovery device or the procedure in paragraph (d) of this section when emissions are controlled by an oxidizer.

(c) To demonstrate compliance with the overall organic HAP control efficiency requirement in § 63.825(b)(7) or the organic HAP emissions limitation requirements in § 63.825(b)(8)–(10), each owner or operator using a solvent recovery device to control emissions shall show compliance by following the procedures in either paragraph (c)(1) or (c)(2) of this section:

(1) Perform a liquid-liquid material balance for each and every month as follows:

(i) Measure the mass of each ink, coating, varnish, adhesive, primer, solvent and other material applied on the press or group of presses controlled by a common solvent recovery device during the month.

(ii) If demonstrating compliance on the basis of organic HAP emission rate based on solids applied, organic HAP emission rate based on material applied or emission of less than the calculated allowable organic HAP, determine the organic HAP content of each ink, coating, varnish, adhesive, primer, solvent, and other material applied during the month following the procedure in § 63.827(b)(2).

(iii) Determine the volatile matter content of each ink, coating, varnish, adhesive, primer, solvent, and other material applied during the month following the procedure in § 63.827(c)(2).

(iv) If demonstrating compliance on the basis of organic HAP emission rate based on solids applied or emission of less than the calculated allowable organic HAP, determine the solids content of each ink, coating, varnish, adhesive, primer, solvent, and other material applied during the month following the procedure in § 63.827(c)(2).

(v) Install, calibrate, maintain, and operate according to the manufacturer's specifications, a device that indicates the cumulative amount of volatile matter recovered by the solvent recovery device on a monthly basis. The device shall be initially certified by the manufacturer to be accurate to within ±2.0 percent.

(vi) Measure the amount of volatile matter recovered for the month.

(vii) Calculate the volatile matter collection and recovery efficiency,  $R_v$ , using Equation 9.

$$R_v = 100 \frac{M_{vr}}{\sum_{i=1}^p M_i C_{vi} + \sum_{j=1}^q M_j} \quad \text{Eq 9}$$

(viii) If demonstrating compliance on the basis of organic HAP emission rate based on solids applied, organic HAP emission rate based on material applied or emission of less than the calculated allowable organic HAP, calculate the organic HAP emitted during the month, H, using Equation 10.

$$H = \left[ 1 - \frac{R_v}{100} \right] \left[ \sum_{i=1}^p \left( C_{hi} M_i + \sum_{j=1}^q C_{hij} M_{ij} \right) \right] \quad \text{Eq 10}$$

(ix) If demonstrating compliance on the basis of organic HAP emission rate based on solids applied, calculate the organic HAP emission rate based on solids applied, L, using Equation 11.

$$L = \frac{H}{\sum_{i=1}^p C_{si} M_i} \quad \text{Eq 11}$$

(x) If demonstrating compliance on the basis of organic HAP emission rate based on materials applied, calculate the organic HAP emission rate based on material applied, S, using Equation 12.

$$S = \frac{H}{\sum_{i=1}^p \left[ M_i + \sum_{j=1}^q M_{ij} \right]} \quad \text{Eq 12}$$

(xi) The affected source is in compliance if

(A) The organic volatile matter collection and recovery efficiency,  $R_v$ , is 95 percent or greater, or

(B) The organic HAP emission rate based on solids applied, L, is 0.20 kg organic HAP per kg solids applied or less, or

(C) the organic HAP emission rate based on material applied, S, is 0.04 kg

organic HAP per kg material applied or less, or

(D) the organic HAP emitted during the month, H, is less than the calculated allowable organic HAP,  $H_a$ , as determined using paragraph (e) of this section.

(2) Use continuous emission monitors, conduct an initial performance test of capture efficiency, and continuously monitor a site specific operating parameter to assure capture efficiency following the procedures in paragraphs (c)(2)(i) through (c)(2)(xi) of this section:

(i) If demonstrating compliance on the basis of organic HAP emission rate based on solids applied, organic HAP emission rate based on materials applied, or emission of less than the calculated allowable organic HAP, measure the mass of each ink, coating, varnish, adhesive, primer, solvent, and other material applied on the press or group of presses controlled by a common control device during the month.

(ii) If demonstrating compliance on the basis of organic HAP emission rate based on solids applied, organic HAP emission rate based on material applied or emission of less than the calculated allowable organic HAP, determine the organic HAP content of each ink, coating, varnish, adhesive, primer, solvent, and other material applied

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during the month following the procedure in §63.827(b)(2).

(iii) Install continuous emission monitors to determine the total organic volatile matter mass flow rate (e.g., by determining the concentration of the vent gas in grams per cubic meter, and the volumetric flow rate in cubic meters per second, such that the total organic volatile matter mass flow rate in grams per second can be calculated and summed) at both the inlet to and the outlet from the control device, such that the percent control efficiency (E) of the control device can be calculated for each month.

(iv) If demonstrating compliance on the basis of organic HAP emission rate based on solids applied or emission of less than the calculated allowable organic HAP, determine the solids content of each ink, coating, varnish, adhesive, primer, solvent, and other material applied during the month following the procedure in §63.827(c)(2).

(v) Install, calibrate, operate and maintain the instrumentation necessary to measure continuously the site-specific operating parameter established in accordance with §63.828(a)(5) whenever a product and packaging rotogravure or wide-web flexographic printing press is operated.

(vi) Determine the capture efficiency (F) in accordance with §63.827(e)-(f).

(vii) Calculate the overall organic HAP control efficiency, (R), achieved for each month using Equation 13.

$$R = \frac{EF}{100} \quad \text{Eq 13}$$

(viii) If demonstrating compliance on the basis of organic HAP emission rate based on solids applied, organic HAP emission rate based on material applied or emission of less than the calculated allowable organic HAP, calculate the organic HAP emitted during the month, H, for each month using Equation 14.

$$H = \left[ 1 - \left( \frac{E}{100} \frac{F}{100} \right) \right] \left[ \sum_{i=1}^p C_{hi} M_i + \sum_{j=1}^q C_{hij} M_{ij} \right] \quad \text{Eq 14}$$

(ix) If demonstrating compliance on the basis of organic HAP emission rate based on solids applied, calculate the organic HAP emission rate based on solids applied, L, using Equation 15.

$$L = \frac{H}{\sum_{i=1}^p C_{si} M_i} \quad \text{Eq 15}$$

(x) If demonstrating compliance on the basis of organic HAP emission rate based on materials applied, calculate the organic HAP emission rate based on material applied, S, using Equation 16.

$$S = \frac{H}{\sum_{i=1}^p \left[ M_i + \sum_{j=1}^q M_{ij} \right]} \quad \text{Eq 16}$$

(xi) The affected source is in compliance if the capture system operating parameter is operated at an average value greater than or less than (as appropriate) the operating parameter value established in accordance with §63.828(a)(5) for each three hour period, and

(A) The organic volatile matter collection and recovery efficiency,  $R_v$ , is 95 percent or greater, or

(B) The organic HAP emission rate based on solids applied, L, is 0.20 kg organic HAP per kg solids applied or less, or

(C) The organic HAP emission rate based on material applied, S, is 0.04 kg organic HAP per kg material applied or less, or

(D) The organic HAP emitted during the month, H, is less than the calculated allowable organic HAP,  $H_a$ , as determined using paragraph (e) of this section.

(d) To demonstrate compliance with the overall organic HAP control efficiency requirement in § 63.825(b)(7) or the overall organic HAP emission rate limitation requirements in § 63.825(b)(8)-(10), each owner or operator using an oxidizer to control emissions shall show compliance by following the procedures in either paragraph (d)(1) or (d)(2) of this section:

(1) demonstrate initial compliance through performance tests of capture efficiency and control device efficiency and continuing compliance through continuous monitoring of capture system and control device operating parameters following the procedures in paragraph (d)(1)(i) through (d)(1)(xi) of this section:

(i) Determine the oxidizer destruction efficiency (E) using the procedure in § 63.827(d).

(ii) Determine the capture system capture efficiency (F) in accordance with § 63.827(e)-(f).

(iii) Calculate the overall organic HAP control efficiency, (R), achieved using Equation 13.

(iv) If demonstrating compliance on the basis of organic HAP emission rate based on solids applied, organic HAP emission rate based on materials applied or emission of less than the calculated allowable organic HAP, measure the mass of each ink, coating, varnish, adhesive, primer, solvent, and other material applied on the press or group of presses controlled by a common solvent recovery device during the month.

(v) If demonstrating compliance on the basis of organic HAP emission rate based on solids applied, organic HAP emission rate based on material applied or emission of less than the calculated allowable organic HAP, determine the organic HAP content of each ink, coating, varnish, adhesive, primer, solvent, and other material applied during the month following the procedure in § 63.827(b)(2).

(vi) If demonstrating compliance on the basis of organic HAP emission rate based on solids applied or emission of less than the calculated allowable organic HAP, determine the solids content of each ink, coating, varnish, adhesive, primer, solvent, and other ma-

terial applied during the month following the procedure in § 63.827(c)(2).

(vii) If demonstrating compliance on the basis of organic HAP emission rate based on solids applied, organic HAP emission rate based on material applied or emission of less than the calculated allowable organic HAP, calculate the organic HAP emitted during the month, H, for each month using Equation 14.

(viii) If demonstrating compliance on the basis of organic HAP emission rate based on solids applied, calculate the organic HAP emission rate based on solids applied, L, for each month using Equation 15.

(ix) If demonstrating compliance on the basis of organic HAP emission rate based on materials applied, calculate the organic HAP emission rate based on material applied, S, using Equation 16.

(x) Install, calibrate, operate and maintain the instrumentation necessary to measure continuously the site-specific operating parameters established in accordance with § 63.828(a)(4)-(5) whenever a product and packaging rotogravure or wide-web flexographic press is operating.

(xi) The affected source is in compliance, if the oxidizer is operated such that the average operating parameter value is greater than the operating parameter value established in accordance with § 63.828(a)(4) for each three-hour period, and the capture system operating parameter is operated at an average value greater than or less than (as appropriate) the operating parameter value established in accordance with § 63.828(a)(5) for each three hour period, and

(A) The overall organic HAP control efficiency, R, is 95 percent or greater, or

(B) The organic HAP emission rate based on solids applied, L, is 0.20 kg organic HAP per kg solids applied or less, or

(C) The organic HAP emission rate based on material applied, S, is 0.04 kg organic HAP per kg material applied or less, or

(D) The organic HAP emitted during the month, H, is less than the calculated allowable organic HAP,  $H_a$ , as

determined using paragraph (e) of this section.

(2) Use continuous emission monitors, conduct an initial performance test of capture efficiency, and continuously monitor a site specific operating parameter to assure capture efficiency. Compliance shall be demonstrated in accordance with the requirements of paragraph (c)(2) of this section.

(e) Owners or operators may calculate the monthly allowable HAP emissions,  $H_a$ , for demonstrating compliance in accordance with paragraph (b)(6), (c)(1)(xi)(D), (c)(2)(xi)(D), or (d)(1)(xi)(D) of this section as follows:

(1) Determine the as-purchased mass of each ink, coating, varnish, adhesive, primer, and other solids-containing material applied each month,  $M_i$ .

(2) Determine the as-purchased solids content of each ink, coating, varnish, adhesive, primer, and other solids-containing material applied each month, in accordance with § 63.827(c)(2),  $C_{si}$ .

(3) Determine the as-purchased mass fraction of each ink, coating, varnish, adhesive, primer, and other solids-containing material which was applied at 20 weight-percent or greater solids content, on an as-applied basis,  $G_i$ .

(4) Determine the total mass of each solvent, diluent, thinner, or reducer added to materials which were applied at less than 20 weight-percent solids content, on an as-applied basis, each month,  $M_{Lj}$ .

(5) Calculate the monthly allowable HAP emissions,  $H_a$ , using Equation 17.

$$H_a = 0.20 \left[ \sum_{i=1}^p M_i G_i C_{si} \right] + 0.04 \left[ \sum_{i=1}^p M_i (1 - G_i) + \sum_{j=1}^q M_{Lj} \right] \quad \text{Eq 17}$$

(f) Owners or operators of product and packaging rotogravure or wide-web flexographic printing presses shall demonstrate compliance according to the procedures in paragraphs (f)(1) through (f)(7) of this section if the affected source operates more than one capture system, more than one control device, one or more never-controlled work stations, or one or more intermittently-controllable work stations.

(1) The owner or operator of each solvent recovery system used to control one or more product and packaging rotogravure or wide-web flexographic presses for which the owner or operator chooses to comply by means of a liquid-liquid mass balance shall determine the organic HAP emissions for those presses controlled by that solvent recovery system either

(i) in accordance with paragraphs (c)(1)(i)-(iii) and (c)(1)(v)-(viii) of this section if the presses controlled by that solvent recovery system have only always-controlled work stations, or

(ii) in accordance with paragraphs (c)(1)(ii)-(iii), (c)(1)(v)-(vi), and (g) of this section if the presses controlled by that solvent recovery system have one

or more never-controlled or intermittently-controllable work stations.

(2) The owner or operator of each solvent recovery system used to control one or more product and packaging rotogravure or wide-web flexographic presses, for which the owner or operator chooses to comply by means of an initial test of capture efficiency, continuous emission monitoring of the control device, and continuous monitoring of a capture system operating parameter, shall

(i) For each capture system delivering emissions to that solvent recovery system, monitor an operating parameter established in accordance with § 63.828(a)(5) to assure capture system efficiency, and

(ii) Determine the organic HAP emissions for those presses served by each capture system delivering emissions to that solvent recovery system either

(A) In accordance with paragraphs (c)(2)(i)-(iii) and (c)(2)(v)-(viii) of this section if the presses served by that capture system have only always-controlled work stations, or

(B) In accordance with paragraphs (c)(2)(ii)-(iii), (c)(2)(v)-(vii), and (g) of

this section if the presses served by that capture system have one or more never-controlled or intermittently-controllable work stations.

(3) The owner or operator of each oxidizer used to control emissions from one or more product and packaging rotogravure or wide-web flexographic presses choosing to demonstrate compliance through performance tests of capture efficiency and control device efficiency and continuing compliance through continuous monitoring of capture system and control device operating parameters, shall

(i) Monitor an operating parameter established in accordance with § 63.828(a)(4) to assure control device efficiency, and

(ii) For each capture system delivering emissions to that oxidizer, monitor an operating parameter established in accordance with § 63.828(a)(5) to assure capture efficiency, and

(iii) Determine the organic HAP emissions for those presses served by each capture system delivering emissions to that oxidizer either

(A) In accordance with paragraphs (d)(1)(i)-(v) and (d)(1)(vii) of this section if the presses served by that capture system have only always-controlled work stations, or

(B) In accordance with paragraphs (d)(1)(i)-(iii), (d)(1)(v), and (g) of this section if the presses served by that capture system have one or more never-controlled or intermittently-controllable work stations.

(4) The owner or operator of each oxidizer used to control emissions from one or more product and packaging rotogravure or wide-web flexographic presses choosing to demonstrate compliance through an initial capture efficiency test, continuous emission monitoring of the control device and continuous monitoring of a capture system operating parameter, shall

(i) For each capture system delivering emissions to that oxidizer, monitor an operating parameter established in accordance with § 63.828(a)(5) to assure capture efficiency, and

(ii) Determine the organic HAP emissions for those presses served by each capture system delivering emissions to that oxidizer either

(A) In accordance with paragraphs (c)(2)(i)-(iii) and (c)(2)(v)-(viii) of this section if the presses served by that capture system have only always-controlled work stations, or

(B) In accordance with paragraphs (c)(2)(ii)-(iii), (c)(2)(v)-(vii), and (g) of this section if the presses served by that capture system have one or more never-controlled or intermittently-controllable work stations.

(5) The owner or operator of one or more uncontrolled product and packaging rotogravure or wide-web flexographic printing presses shall determine the organic HAP applied on those presses using Equation 8. The organic HAP emitted from an uncontrolled press is equal to the organic HAP applied on that press.

(6) If demonstrating compliance on the basis of organic HAP emission rate based on solids applied or emission of less than the calculated allowable organic HAP, the owner or operator shall determine the solids content of each ink, coating, varnish, adhesive, primer, solvent and other material applied during the month following the procedure in § 63.827(c)(2).

(7) The owner or operator shall determine the organic HAP emissions for the affected source for the month by summing all organic HAP emissions calculated according to paragraphs (f)(1), (f)(2)(ii), (f)(3)(iii), (f)(4)(ii), and (f)(5) of this section. The affected source is in compliance for the month, if all operating parameters required to be monitored under paragraphs (f)(2)-(4) of this section were maintained at the appropriate values, and

(i) The total mass of organic HAP emitted by the affected source was not more than four percent of the total mass of inks, coatings, varnishes, adhesives, primers, solvents, diluents, reducers, thinners and other materials applied by the affected source, or

(ii) The total mass of organic HAP emitted by the affected source was not more than 20 percent of the total mass of solids applied by the affected source, or

(iii) The total mass of organic HAP emitted by the affected source was not more than the equivalent allowable organic HAP emissions for the affected

source,  $H_a$ , calculated in accordance with paragraph (e) of this section, or

(iv) The total mass of organic HAP emitted by the affected source was not more than five percent of the total mass of organic HAP applied by the affected source. The total mass of organic HAP applied by the affected source in the month shall be determined by the owner or operator using Equation 8.

(g) Owners or operators determining organic HAP emissions from a press or group of presses having one or more never-controlled or intermittently-controllable work stations and using the procedures specified in paragraphs (f)(1)(ii), (f)(2)(ii)(B), (f)(3)(iii)(B), or (f)(4)(ii)(B) of this section shall for that press or group of presses:

(1) Determine the sum of the mass of all inks, coatings, varnishes, adhesives, primers, and other solids-containing materials which are applied on intermittently-controllable work stations in bypass mode and the mass of all inks, coatings, varnishes, adhesives, primers, and other solids-containing materials which are applied on never-controlled work stations during the month,  $M_{Bi}$ .

(2) Determine the sum of the mass of all solvents, reducers, thinners, and other diluents which are applied on

intermittently-controllable work stations in bypass mode and the mass of all solvents, reducers, thinners, and other diluents which are applied on never-controlled work stations during the month,  $M_{Bj}$ .

(3) Determine the sum of the mass of all inks, coatings, varnishes, adhesives, primers, and other solids-containing materials which are applied on intermittently-controllable work stations in controlled mode and the mass of all inks, coatings, varnishes, adhesives, primers, and other solids-containing materials which are applied on always-controlled work stations during the month,  $M_{Bj}$ .

(4) Determine the sum of the mass of all solvents, reducers, thinners, and other diluents which are applied on intermittently-controllable work stations in controlled mode and the mass of all solvents, reducers, thinners, and other diluents which are applied on always-controlled work stations during the month,  $M_{Cj}$ .

(5) For each press or group of presses for which the owner or operator uses the provisions of paragraph (f)(1)(ii) of this section, the owner or operator shall calculate the organic HAP emitted during the month using Equation 18.

$$H = \left[ \sum_{i=1}^p M_{Ci} C_{hi} + \sum_{j=1}^q M_{Cj} C_{hj} \right] \left[ 1 - \frac{M_{vr}}{\sum_{i=1}^p M_{Ci} C_{vi} + \sum_{j=1}^q M_{Cj}} \right] + \left[ \sum_{i=1}^p M_{Bi} C_{hi} + \sum_{j=1}^q M_{Bj} C_{hj} \right] \quad \text{Eq 18}$$

(6) For each press or group of presses for which the owner or operator uses the provisions of paragraphs (f)(2)(ii)(B), (f)(3)(iii)(B), or (f)(4)(ii)(B)

of this section, the owner or operator shall calculate the organic HAP emitted during the month using Equation (19).

$$H = \left[ \sum_{i=1}^p M_{Ci} C_{hi} + \sum_{j=1}^q M_{Cj} C_{hj} \right] \left[ 1 - \left( \frac{E}{100} - \frac{F}{100} \right) \right] + \left[ \sum_{i=1}^p M_{Bi} C_{hi} + \sum_{j=1}^q M_{Bj} C_{hj} \right] \quad \text{Eq 19}$$

(h) If the affected source operates more than one capture system or more than one control device, and has no never-controlled work stations and no intermittently-controllable work stations, then the affected source is in compliance with the 95 percent overall organic HAP control efficiency requirement for the month if for each press or group of presses controlled by a common control device:

(1) The volatile matter collection and recovery efficiency,  $R_v$ , as determined by paragraphs (c)(1)(i), (c)(1)(iii), and (c)(1)(v)-(vii) of this section is equal to or greater than 95 percent, or

(2) The overall organic HAP control efficiency as determined by paragraphs (c)(2)(iii) and (c)(2)(v)-(vii) of this section for each press or group of presses served by that control device and a common capture system is equal to or greater than 95 percent and the average capture system operating parameter value for each capture system serving that control device is greater than or less than (as appropriate) the operating parameter value established for that capture system in accordance with § 63.828(a)(5) for each three hour period, or

(3) The overall organic HAP control efficiency as determined by paragraphs (d)(1)(i)-(iii) and (d)(1)(x) of this section for each press or group of presses served by that control device and a common capture system is equal to or greater than 95 percent, the oxidizer is operated such that the average operating parameter value is greater than the operating parameter value established in accordance with § 63.828(a)(4) for each three hour period, and the average capture system operating parameter value for each capture system serving that control device is greater than or less than (as appropriate) the operating parameter value established for that capture system in accordance with § 63.828(a)(5) for each three hour period.

**§ 63.826 Compliance dates.**

(a) The compliance date for an owner or operator of an existing affected source subject to the provisions of this subpart is May 30, 1999.

(b) The compliance date for an owner or operator of a new affected source subject to the provisions of this sub-

part is immediately upon start-up of the affected source, or May 30, 1996, whichever is later.

(c) Affected sources which have undergone reconstruction are subject to the requirements for new affected sources. The costs associated with the purchase and installation of air pollution control equipment are not considered in determining whether the affected source has been reconstructed. Additionally, the costs of retrofitting and replacement of equipment that is installed specifically to comply with this subpart are not considered reconstruction costs.

**§ 63.827 Performance test methods.**

(a) An owner or operator using a control device to comply with the requirements of §§ 63.824-63.825 is not required to conduct an initial performance test to demonstrate compliance if one or more of the criteria in paragraphs (a)(1) through (a)(3) of this section are met:

(1) A control device that is in operation prior to May 30, 1996, does not need to be tested if

(i) It is equipped with continuous emission monitors for determining inlet and outlet total organic volatile matter concentration, and capture efficiency has been determined in accordance with the requirements of this subpart, such that an overall HAP control efficiency can be calculated, and

(ii) The continuous emission monitors are used to demonstrate continuous compliance in accordance with § 63.828, or

(2) The owner or operator has met the requirements of either § 63.7(e)(2)(iv) or § 63.7(h), or

(3) The control device is a solvent recovery system and the owner or operator chooses to comply by means of a monthly liquid-liquid material balance.

(b) Determination of the organic HAP content of inks, coatings, varnishes, adhesives, primers, solvents, thinners, reducers, diluents, and other materials for the purpose of meeting the requirements of § 63.824 shall be conducted according to paragraph (b)(1) of this section. Determination of

the organic HAP content of inks, coatings, varnishes, adhesives, primers, solvents, thinners, reducers, diluents, and other materials for the purpose of meeting the requirements of § 63.825 shall be conducted according to paragraph (b)(2) of this section.

(1) Each owner or operator of a publication rotogravure facility shall determine the organic HAP weight-fraction of each ink, coating, varnish, adhesive, primer, solvent, and other material used in a publication rotogravure affected source by following one of the procedures in paragraphs (b)(1)(i) through (b)(1)(iii) of this section:

(i) The owner or operator may test the material in accordance with Method 311 of appendix A of this part 63. The Method 311 determination may be performed by the manufacturer of the material and the results provided to the owner or operator. If these values cannot be determined using Method 311, the owner or operator shall submit an alternative technique for determining their values for approval by the Administrator. The recovery efficiency of the technique must be determined for all of the target organic HAP and a correction factor, if necessary, must be determined and applied.

(ii) The owner or operator may determine the volatile matter content of the material in accordance with § 63.827(c)(1) and use this value for the organic HAP content for all compliance purposes.

(iii) The owner or operator may, except as noted in paragraph (b)(1)(iv) of this section, rely on formulation data provided by the manufacturer of the material on a CPDS if

(A) The manufacturer has included in the organic HAP content determination all HAP present at a level greater than 0.1 percent in any raw material used, weighted by the mass fraction of each raw material used in the material, and

(B) The manufacturer has determined the HAP content of each raw material present in the formulation by Method 311 of appendix A of this part 63, or by an alternate method approved by the Administrator, or by reliance on a CPDS from a raw material supplier prepared in accordance with § 63.827(b)(1)(iii)(A).

(iv) In the event of any inconsistency between the Method 311 of appendix A of this part 63 test data and formulation data, that is, if the Method 311 test value is higher, the Method 311 test data shall govern, unless after consultation, an owner or operator demonstrates to the satisfaction of the enforcement authority that the formulation data are correct.

(2) Each owner or operator of a product and packaging rotogravure or wide-web flexographic printing facility shall determine the organic HAP weight fraction of each ink, coating, varnish, adhesive, primer, solvent, thinner, reducer, diluent, and other material applied by following one of the procedures in paragraphs (b)(2)(i) through (b)(2)(iii) of this section:

(i) The owner or operator may test the material in accordance with Method 311 of appendix A of this part 63. The Method 311 determination may be performed by the manufacturer of the material and the results provided to the owner or operator. If these values cannot be determined using Method 311, the owner or operator shall submit an alternative technique for determining their values for approval by the Administrator. The recovery efficiency of the technique must be determined for all of the target organic HAP and a correction factor, if necessary, must be determined and applied.

(ii) The owner or operator may determine the volatile matter content of the material in accordance with § 63.827(c)(2) and use this value for the organic HAP content for all compliance purposes.

(iii) The owner or operator may, except as noted in paragraph (b)(2)(iv) of this section, rely on formulation data provided by the manufacturer of the material on a CPDS if

(A) The manufacturer has included in the organic HAP content determination, all organic HAP present at a level greater than 0.1 percent in any raw material used, weighted by the mass fraction of each raw material used in the material, and

(B) The manufacturer has determined the organic HAP content of each raw material present in the formulation by Method 311 of appendix A of this part 63, or, by an alternate method approved

by the Administrator, or, by reliance on a CPDS from a raw material supplier prepared in accordance with § 63.827(b)(2)(iii)(A).

(iv) In the event of any inconsistency between the Method 311 of appendix A of this part 63 test data and a facility's formulation data, that is, if the Method 311 test value is higher, the Method 311 test data shall govern, unless after consultation, an owner or operator demonstrates to the satisfaction of the enforcement authority that the formulation data are correct.

(c) Determination by the owner or operator of the volatile matter content of inks, coatings, varnishes, adhesives, primers, solvents, reducers, thinners, diluents, and other materials used for the purpose of meeting the requirements of § 63.824 shall be conducted according to paragraph (c)(1) of this section. Determination by the owner or operator of the volatile matter and solids content of inks, coatings, varnishes, adhesives, primers, solvents, reducers, thinners, diluents, and other materials applied for the purpose of meeting the requirements of § 63.825 shall be conducted according to paragraph (c)(2) of this section.

(1) Each owner or operator of a publication rotogravure facility shall determine the volatile matter weight-fraction of each ink, coating, varnish, adhesive, primer, solvent, reducer, thinner, diluent, and other material used using Method 24A of 40 CFR part 60, appendix A. The Method 24A determination may be performed by the manufacturer of the material and the results provided to the owner or operator. If these values cannot be determined using Method 24A, the owner or operator shall submit an alternative technique for determining their values for approval by the Administrator. The owner or operator may rely on formulation data, subject to the provisions of paragraph (c)(3) of this section.

(2) Each owner or operator of a product and packaging rotogravure or wide-web flexographic printing facility shall determine the volatile matter and solids weight-fraction of each ink, coating, varnish, adhesive, primer, solvent, reducer, thinner, diluent, and other material applied using Method 24 of 40 CFR part 60, appendix A. The Method

24 determination may be performed by the manufacturer of the material and the results provided to the owner or operator. If these values cannot be determined using Method 24, the owner or operator shall submit an alternative technique for determining their values for approval by the Administrator. The owner or operator may rely on formulation data, subject to the provisions of paragraph (c)(3) of this section.

(3) Owners or operators may determine the volatile matter content of materials based on formulation data, and may rely on volatile matter content data provided by material suppliers. In the event of any inconsistency between the formulation data and the results of Test Methods 24 or 24A of 40 CFR part 60, appendix A, the applicable test method shall govern, unless after consultation, the owner or operator can demonstrate to the satisfaction of the enforcement agency that the formulation data are correct.

(d) A performance test of a control device to determine destruction efficiency for the purpose of meeting the requirements of §§ 63.824–63.825 shall be conducted by the owner or operator in accordance with the following:

(1) An initial performance test to establish the destruction efficiency of an oxidizer and the associated combustion zone temperature for a thermal oxidizer and the associated catalyst bed inlet temperature for a catalytic oxidizer shall be conducted and the data reduced in accordance with the following reference methods and procedures:

(i) Method 1 or 1A of 40 CFR part 60, appendix A is used for sample and velocity traverses to determine sampling locations.

(ii) Method 2, 2A, 2C, or 2D of 40 CFR part 60, appendix A is used to determine gas volumetric flow rate.

(iii) Method 3 of 40 CFR part 60, appendix A is used for gas analysis to determine dry molecular weight.

(iv) Method 4 of 40 CFR part 60, appendix A is used to determine stack gas moisture.

(v) Methods 2, 2A, 3, and 4 of 40 CFR part 60, appendix A shall be performed, as applicable, at least twice during each test period.

(vi) Method 25 of 40 CFR part 60, Appendix A, shall be used to determine

organic volatile matter concentration, except as provided in paragraphs (d)(1)(vi)(A)–(C) of this section. The owner or operator shall submit notice of the intended test method to the Administrator for approval along with notice of the performance test required under § 63.7(c). The owner or operator may use Method 25A of 40 CFR part 60, appendix A, if

(A) An exhaust gas organic volatile matter concentration of 50 parts per million by volume (ppmv) or less is required to comply with the standards of §§ 63.824–63.825, or

(B) The organic volatile matter concentration at the inlet to the control system and the required level of control are such to result in exhaust gas organic volatile matter concentrations of 50 ppmv or less, or

(C) Because of the high efficiency of the control device, the anticipated organic volatile matter concentration at the control device exhaust is 50 ppmv or less, regardless of inlet concentration.

(vii) Each performance test shall consist of three separate runs; each run conducted for at least one hour under the conditions that exist when the affected source is operating under normal operating conditions. For the purpose of determining organic volatile matter concentrations and mass flow rates, the average of results of all runs shall apply.

(viii) Organic volatile matter mass flow rates shall be determined using Equation 20:

$$M_f = Q_{sd} \left[ \sum_{i=1}^n C_i MW_i \right] [0.0416] [10^{-6}] \quad \text{Eq 20}$$

(ix) Emission control device efficiency shall be determined using Equation 21:

$$E = \frac{M_{fi} - M_{fo}}{M_{fi}} \quad \text{Eq 21}$$

(2) The owner or operator shall record such process information as may be necessary to determine the conditions of the performance test. Operations during periods of start-up, shutdown, and malfunction shall not constitute representative conditions for the purpose of a performance test.

(3) For the purpose of determining the value of the oxidizer operating parameter that will demonstrate continuing compliance, the time-weighted average of the values recorded during the performance test shall be computed. For an oxidizer other than catalytic oxidizer, the owner or operator shall establish as the operating parameter the minimum combustion temperature. For a catalytic oxidizer, the owner or operator shall establish as the operating parameter the minimum gas temperature upstream of the catalyst bed.

These minimum temperatures are the operating parameter values that demonstrate continuing compliance with the requirements of §§ 63.824–63.825.

(e) A performance test to determine the capture efficiency of each capture system venting organic emissions to a control device for the purpose of meeting the requirements of §§ 63.824(b)(1)(ii), 63.824(b)(2), 63.825(c)(2), 63.825(d)(1)–(2), 63.825(f)(2)–(4), or 63.825(h)(2)–(3) shall be conducted by the owner or operator in accordance with the following:

(1) For permanent total enclosures, capture efficiency shall be assumed as 100 percent. Procedure T—Criteria for and Verification of a Permanent or Temporary Total Enclosure as found in appendix B to § 52.741 of part 52 of this chapter shall be used to confirm that an enclosure meets the requirements for permanent total enclosure.

(2) For temporary total enclosures, the capture efficiency shall be determined according to the protocol specified in § 52.741(a)(4)(iii)(B) of part 52 of this chapter. The owner or operator may exclude never-controlled work

stations from such capture efficiency determinations.

(f) As an alternative to the procedures specified in § 63.827(e) an owner or operator required to conduct a capture efficiency test may use any capture efficiency protocol and test methods that satisfy the criteria of either the Data Quality Objective (DQO) or the Lower Confidence Limit (LCL) approach as described in Appendix A of this subpart. The owner or operator may exclude never-controlled work stations from such capture efficiency determinations.

**§ 63.828 Monitoring requirements.**

(a) Following the date on which the initial performance test of a control device is completed, to demonstrate continuing compliance with the standard, the owner or operator shall monitor and inspect each control device required to comply with §§ 63.824-63.825 to ensure proper operation and maintenance by implementing the applicable requirements in paragraph (a)(1) through (a)(5) of this section.

(1) Owners or operators of product and packaging rotogravure or wide-web flexographic presses with intermittently-controllable work stations shall follow one of the procedures in paragraphs (a)(1)(i) through (a)(1)(iv) of this section for each dryer associated with such a work station:

(i) Install, calibrate, maintain, and operate according to the manufacturer's specifications a flow control position indicator that provides a record indicating whether the exhaust stream from the dryer was directed to the control device or was diverted from the control device. The time and flow control position must be recorded at least once per hour, as well as every time the flow direction is changed. The flow control position indicator shall be installed at the entrance to any bypass line that could divert the exhaust stream away from the control device to the atmosphere.

(ii) Secure any bypass line valve in the closed position with a car-seal or a lock-and-key type configuration; a visual inspection of the seal or closure mechanism shall be performed at least once every month to ensure that the valve or damper is maintained in the

closed position and the exhaust stream is not diverted through the bypass line.

(iii) Ensure that any bypass line valve or damper is in the closed position through continuous monitoring of valve position. The monitoring system shall be inspected at least once every month to ensure that it is functioning properly.

(iv) Use an automatic shutdown system in which the press is stopped when flow is diverted away from the control device to any bypass line. The automatic system shall be inspected at least once every month to ensure that it is functioning properly.

(2) Compliance monitoring shall be subject to the provisions of paragraphs (a)(2)(i) and (a)(2)(ii) of this section, as applicable.

(i) All continuous emission monitors shall comply with performance specifications (PS) 8 or 9 of 40 CFR part 60, appendix B, as appropriate. The requirements of appendix F of 40 CFR part 60 shall also be followed. In conducting the quarterly audits required by appendix F, owners or operators must challenge the monitors with compounds representative of the gaseous emission stream being controlled.

(ii) All temperature monitoring equipment shall be installed, calibrated, maintained, and operated according to manufacturers specifications. The calibration of the chart recorder, data logger, or temperature indicator shall be verified every three months; or the chart recorder, data logger, or temperature indicator shall be replaced. The replacement shall be done either if the owner or operator chooses not to perform the calibration, or if the equipment cannot be calibrated properly.

(3) An owner or operator complying with §§ 63.824-63.825 through continuous emission monitoring of a control device shall install, calibrate, operate, and maintain continuous emission monitors to measure the total organic volatile matter concentration at both the control device inlet and the outlet.

(4) An owner or operator complying with the requirements of §§ 63.824-63.825 through the use of an oxidizer and demonstrating continuous compliance through monitoring of an oxidizer operating parameter shall:

(i) For an oxidizer other than a catalytic oxidizer, install, calibrate, operate, and maintain a temperature monitoring device equipped with a continuous recorder. The device shall have an accuracy of  $\pm 1$  percent of the temperature being monitored in  $^{\circ}\text{C}$  or  $\pm 1$   $^{\circ}\text{C}$ , whichever is greater. The thermocouple or temperature sensor shall be installed in the combustion chamber at a location in the combustion zone.

(ii) For a catalytic oxidizer, install, calibrate, operate, and maintain a temperature monitoring device equipped with a continuous recorder. The device shall be capable of monitoring temperature with an accuracy of  $\pm 1$  percent of the temperature being monitored in  $^{\circ}\text{C}$  or  $\pm 1$   $^{\circ}\text{C}$ , whichever is greater. The thermocouple or temperature sensor shall be installed in the vent stream at the nearest feasible point to the catalyst bed inlet.

(5) An owner or operator complying with the requirements of §§ 63.824–63.825 through the use of a control device and demonstrating continuous compliance by monitoring an operating parameter to ensure that the capture efficiency measured during the initial compliance test is maintained, shall:

(i) Submit to the Administrator with the compliance status report required by § 63.9(h) of the General Provisions, a plan that

(A) Identifies the operating parameter to be monitored to ensure that the capture efficiency measured during the initial compliance test is maintained,

(B) Discusses why this parameter is appropriate for demonstrating ongoing compliance, and

(C) Identifies the specific monitoring procedures;

(ii) Set the operating parameter value, or range of values, that demonstrate compliance with §§ 63.824–63.825, and

(iii) Conduct monitoring in accordance with the plan submitted to the Administrator unless comments received from the Administrator require an alternate monitoring scheme.

(b) Any excursion from the required operating parameters which are monitored in accordance with paragraphs (a)(4) and (a)(5) of this section, unless otherwise excused, shall be considered a violation of the emission standard.

#### **§ 63.829 Recordkeeping requirements.**

(a) The recordkeeping provisions of 40 CFR part 63 subpart A of this part that apply and those that do not apply to owners and operators of affected sources subject to this subpart are listed in Table 1 of this subpart.

(b) Each owner or operator of an affected source subject to this subpart shall maintain the records specified in paragraphs (b)(1) through (b)(3) of this section on a monthly basis in accordance with the requirements of § 63.10(b)(1) of this part:

(1) Records specified in § 63.10(b)(2) of this part, of all measurements needed to demonstrate compliance with this standard, such as continuous emission monitor data, control device and capture system operating parameter data, material usage, HAP usage, volatile matter usage, and solids usage that support data that the source is required to report.

(2) Records specified in § 63.10(b)(3) of this part for each applicability determination performed by the owner or operator in accordance with the requirements of § 63.820(a) of this subpart, and

(3) Records specified in § 63.10(c) of this part for each continuous monitoring system operated by the owner or operator in accordance with the requirements of § 63.828(a) of this subpart.

(c) Each owner or operator of an affected source subject to this subpart shall maintain records of all liquid-liquid material balances performed in accordance with the requirements of §§ 63.824–63.825 of this subpart. The records shall be maintained in accordance with the requirements of § 63.10(b) of this part.

(d) The owner or operator of each facility which commits to the criteria of § 63.820(a)(2) shall maintain records of all required measurements and calculations needed to demonstrate compliance with these criteria, including the mass of all HAP containing materials used and the mass fraction of HAP present in each HAP containing material used, on a monthly basis.

(e) The owner or operator of each facility which meets the limits and criteria of § 63.821(b)(1) shall maintain records as required in paragraph (e)(1) of this section. The owner or operator

of each facility which meets the limits and criteria of § 63.821(b)(2) shall maintain records as required in paragraph (e)(2) of this section. Owners or operators shall maintain these records for five years, and upon request, submit them to the Administrator.

(1) For each facility which meets the criteria of § 63.821(b)(1), the owner or operator shall maintain records of the total volume of each material applied on product and packaging rotogravure or wide-web flexographic printing presses during each month.

(2) For each facility which meets the criteria of § 63.821(b)(2), the owner or operator shall maintain records of the total volume and organic HAP content of each material applied on product and packaging rotogravure or wide-web flexographic printing presses during each month.

(f) The owner or operator choosing to exclude from an affected source, a product and packaging rotogravure or wide-web flexographic press which meets the limits and criteria of § 63.821(a)(2)(ii)(A) shall maintain the records specified in paragraphs (f)(1) and (f)(2) of this section for five years and submit them to the Administrator upon request:

(1) The total mass of each material applied each month on the press, including all inboard and outboard stations, and

(2) The total mass of each material applied each month on the press by product and packaging rotogravure or wide-web flexographic printing operations.

**§ 63.830 Reporting requirements.**

(a) The reporting provisions of 40 CFR part 63 subpart A of this part that apply and those that do not apply to owners and operators of affected sources subject to this subpart are listed in Table 1 of this subpart.

(b) Each owner or operator of an affected source subject to this subpart shall submit the reports specified in paragraphs (b)(1) through (b)(6) of this section to the Administrator:

(1) An initial notification required in § 63.9(b).

(i) Initial notifications for existing sources shall be submitted no later

than one year before the compliance date specified in § 63.826(a).

(ii) Initial notifications for new and reconstructed sources shall be submitted as required by § 63.9(b).

(iii) For the purpose of this subpart, a Title V or part 70 permit application may be used in lieu of the initial notification required under § 63.9(b), provided the same information is contained in the permit application as required by § 63.9(b), and the State to which the permit application has been submitted has an approved operating permit program under part 70 of this chapter and has received delegation of authority from the EPA.

(iv) Permit applications shall be submitted by the same due dates as those specified for the initial notifications.

(2) A Notification of Performance Tests specified in § 63.7 and § 63.9(e) of this part. This notification, and the site-specific test plan required under § 63.7(c)(2) shall identify the operating parameter to be monitored to ensure that the capture efficiency measured during the performance test is maintained. The operating parameter identified in the site-specific test plan shall be considered to be approved unless explicitly disapproved, or unless comments received from the Administrator require monitoring of an alternate parameter.

(3) A Notification of Compliance Status specified in § 63.9(h) of this part.

(4) Performance test reports specified in § 63.10(d)(2) of this part.

(5) Start-up, shutdown, and malfunction reports specified in § 63.10(d)(5) of this part, except that the provisions in subpart A pertaining to start-ups, shutdowns, and malfunctions do not apply unless a control device is used to comply with this subpart.

(i) If actions taken by an owner or operator during a start-up, shutdown, or malfunction of an affected source (including actions taken to correct a malfunction) are not completely consistent with the procedures specified in the source's start-up, shutdown, and malfunction plan specified in § 63.6(e)(3) of this part, the owner or operator shall state such information in the report. The start-up, shutdown, or malfunction report shall consist of a letter

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containing the name, title, and signature of the responsible official who is certifying its accuracy, that shall be submitted to the Administrator.

(ii) Separate start-up, shutdown, or malfunction reports are not required if the information is included in the report specified in paragraph (b)(6) of this section.

(6) A summary report specified in § 63.10(e)(3) of this part shall be submitted on a semi-annual basis (i.e., once every six-month period). In addition to a report of operating parameter exceedances as required by § 63.10(e)(3)(i), the summary report shall include, as applicable:

(i) Exceedances of the standards in §§ 63.824–63.825.

(ii) Exceedances of either of the criteria of § 63.820(a)(2).

(iii) Exceedances of the criterion of § 63.821(b)(1) and the criterion of § 63.821(b)(2) in the same month.

(iv) Exceedances of the criterion of § 63.821(a)(2)(ii)(A).

**§ 63.831 Delegation of authority.**

(a) In delegating implementation and enforcement authority to a State under 40 CFR part 63 subpart E of this part, the authorities contained in paragraph (b) of this section shall be retained by the Administrator and not transferred to a State.

(b) Authority which will not be delegated to States: § 63.827(b), approval of alternate test method for organic HAP content determination; § 63.827(c), approval of alternate test method for volatile matter determination.

**§§ 63.832–63.839 [Reserved]**

TABLE 1 TO SUBPART KK.—APPLICABILITY OF GENERAL PROVISIONS TO SUBPART KK

| General provisions reference | Applicable to subpart KK | Comment  |
|------------------------------|--------------------------|--|
| § 63.1(a)(1)–(a)(4)          | Yes.                     |  |
| § 63.1(a)(5)                 | No                       | Section reserved.  |
| § 63.1(a)(6)–(a)(8)          | No.                      |  |
| § 63.1(a)(9)                 | No                       | Section reserved.  |
| § 63.1(a)(10)–(a)(14)        | Yes.                     |  |
| § 63.1(b)(1)                 | No                       | Subpart KK specifies applicability.  |
| § 63.1(b)(2)–(b)(3)          | Yes.                     |  |
| § 63.1(c)(1)                 | Yes.                     |  |
| § 63.1(c)(2)                 | No                       | Area sources are not subject to subpart KK.  |
| § 63.1(c)(3)                 | No                       | Section reserved.  |
| § 63.1(c)(4)                 | Yes.                     |  |
| § 63.1(c)(5)                 | No.                      |  |
| § 63.1(d)                    | No                       | Section reserved.  |
| § 63.1(e)                    | Yes.                     |  |
| § 63.2                       | Yes                      | Additional definitions in subpart KK.  |
| § 63.3(a)–(c)                | Yes.                     |  |
| § 63.4(a)(1)–(a)(3)          | Yes.                     |  |
| § 63.4(a)(4)                 | No                       | Section reserved.  |
| § 63.4(a)(5)                 | Yes.                     |  |
| § 63.4(b)–(c)                | Yes.                     |  |
| § 63.5(a)(1)–(a)(2)          | Yes.                     |  |
| § 63.5(b)(1)                 | Yes.                     |  |
| § 63.5(b)(2)                 | No                       | Section reserved.  |
| § 63.5(b)(3)–(b)(6)          | Yes.                     |  |
| § 63.5(c)                    | No                       | Section reserved.  |
| § 63.5(d)                    | Yes.                     |  |
| § 63.5(e)                    | Yes.                     |  |
| § 63.5(f)                    | Yes.                     |  |
| § 63.6(a)                    | Yes.                     |  |
| § 63.6(b)(1)–(b)(5)          | Yes.                     |  |
| § 63.6(b)(6)                 | No                       | Section reserved.  |
| § 63.6(b)(7)                 | Yes.                     |  |
| § 63.6(c)(1)–(c)(2)          | Yes.                     |  |
| § 63.6(c)(3)–(c)(4)          | No                       | Sections reserved.   |
| § 63.6(c)(5)                 | Yes.                     |  |
| § 63.6(d)                    | No                       | Section reserved.  |
| § 63.6(e)                    | Yes                      | Provisions pertaining to start-ups, shutdowns, malfunctions, and CMS do not apply unless an add-on control system is used. |
| § 63.6(f)                    | Yes.                     |  |
| § 63.6(g)                    | Yes.                     |  |
| § 63.6(h)                    | No                       | Subpart KK does not require COMS.  |
| § 63.6(i)(1)–(i)(14)         | Yes.                     |  |

TABLE 1 TO SUBPART KK.—APPLICABILITY OF GENERAL PROVISIONS TO SUBPART KK—Continued

| General provisions reference | Applicable to subpart KK | Comment   |
|------------------------------|--------------------------|---|
| § 63.6(i)(15) .....          | No .....                 | Section reserved.   |
| § 63.6(i)(16) .....          | Yes.                     |   |
| § 63.6(j) .....              | Yes.                     |   |
| § 63.7 .....                 | Yes.                     | Section reserved.<br>Subpart KK specifies the use of solvent recovery devices or oxidizers.                                     |
| § 63.8(a)(1)–(a)(2) .....    | Yes.                     |   |
| § 63.8(a)(3) .....           | No .....                 |   |
| § 63.8(a)(4) .....           | No .....                 |   |
| § 63.8(b) .....              | Yes.                     | Subpart KK specifies CMS sampling requirements.<br>Subpart KK does not require COMS.<br>Provisions for COMS are not applicable. |
| § 63.8(c)(1)–(3) .....       | Yes.                     |   |
| § 63.8(c)(4) .....           | No .....                 |   |
| § 63.8(c)(5) .....           | No .....                 |   |
| § 63.8(c)(6)–(c)(8) .....    | Yes .....                |   |
| § 63.8(d)–(f) .....          | Yes.                     |   |
| § 63.8(g) .....              | No .....                 |   |
| § 63.8(a) .....              | Yes.                     |   |
| § 63.9(a) .....              | Yes.                     | Subpart KK specifies CMS data reduction requirements.   |
| § 63.9(b)(1) .....           | Yes.                     |   |
| § 63.9(b)(2) .....           | Yes .....                |   |
| § 63.9(b)(3)–(b)(5) .....    | Yes.                     |   |
| § 63.9(c)–(e) .....          | Yes.                     |   |
| § 63.9(f) .....              | No .....                 |   |
| § 63.9(g) .....              | Yes .....                | Subpart KK does not require opacity and visible emissions observations.<br>Provisions for COMS are not applicable.              |
| § 63.9(h)(1)–(h)(3) .....    | Yes.                     |   |
| § 63.9(h)(4) .....           | No .....                 | Section reserved.   |
| § 63.9(h)(5)–(h)(6) .....    | Yes.                     |   |
| § 63.9(i) .....              | Yes.                     |   |
| § 63.9(j) .....              | Yes.                     | Section reserved.   |
| § 63.10(a) .....             | Yes.                     |   |
| § 63.10(b)(1)–(b)(3) .....   | Yes.                     |   |
| § 63.10(c)(1) .....          | Yes.                     |   |
| § 63.10(c)(2)–(c)(4) .....   | No .....                 |   |
| § 63.10(c)(5)–(c)(8) .....   | Yes.                     |   |
| § 63.10(c)(9) .....          | No .....                 |   |
| § 63.10(c)(10)–(c)(15) ..... | Yes.                     |   |
| § 63.10(d)(1)–(d)(2) .....   | Yes.                     |   |
| § 63.10(d)(3) .....          | No .....                 |   |
| § 63.10(d)(4)–(d)(5) .....   | Yes.                     | Subpart KK does not require opacity and visible emissions observations.   |
| § 63.10(e) .....             | Yes .....                |   |
| § 63.10(f) .....             | Yes.                     |   |
| § 63.11 .....                | No .....                 | Subpart KK specifies the use of solvent recovery devices or oxidizers.  |
| § 63.12 .....                | Yes.                     |   |
| § 63.13 .....                | Yes.                     |   |
| § 63.14 .....                | Yes.                     |   |
| § 63.15 .....                | Yes.                     |   |

APPENDIX A TO SUBPART KK TO PART 63—DATA QUALITY OBJECTIVE AND LOWER CONFIDENCE LIMIT APPROACHES FOR ALTERNATIVE CAPTURE EFFICIENCY PROTOCOLS AND TEST METHODS

1. Introduction

1.1 Alternative capture efficiency (CE) protocols and test methods that satisfy the criteria of either the data quality objective (DQO) approach or the lower confidence limit (LCL) approach are acceptable under § 63.827(f). The general criteria for alternative CE protocols and test methods to qualify under either the DQO or LCL approach are described in section 2. The DQO approach and criteria specific to the DQO ap-

proach are described in section 3. The LCL approach and criteria specific to the LCL approach are described in section 4. The recommended reporting for alternative CE protocols and test methods are presented in section 5. The recommended recordkeeping for alternative CE protocols and test methods are presented in section 6.

1.2 Although the Procedures L, G.1, G.2, F.1, and F.2 in § 52.741 of part 52 were developed for TTE and BE testing, the same procedures can also be used in an alternative CE protocol. For example, a traditional liquid/gas mass balance CE protocol could employ Procedure L to measure liquid VOC input and Procedure G.1 to measure captured VOC.

2. General Criteria for DQO and LCL Approaches

2.1 The following general criteria must be met for an alternative capture efficiency protocol and test methods to qualify under the DQO or LCL approach.

2.2 An alternative CE protocol must consist of at least three valid test runs. Each test run must be at least 20 minutes long. No test run can be longer than 24 hours.

2.3 All test runs must be separate and independent. For example, liquid VOC input and output must be determined independently for each run. The final liquid VOC sample from one run cannot be the initial sample for another run. In addition, liquid input for an entire day cannot be apportioned among test runs based on production.

2.4 Composite liquid samples cannot be used to obtain an "average composition" for a test run. For example, separate initial and final coating samples must be taken and analyzed for each run; initial and final samples cannot be combined prior to analysis to derive an "average composition" for the test run.

2.5 All individual test runs that result in a CE of greater than 105 percent are invalid and must be discarded.

2.6 If the source can demonstrate to the regulatory agency that a test run should not be considered due to an identified testing or analysis error such as spillage of part of the sample during shipping or an upset or improper operating conditions that is not considered part of normal operation then the test result for that individual test run may be discarded. This limited exception allows

sources to discard as "outliers" certain individual test runs without replacing them with a valid test run as long as the facility has at least three valid test runs to use when calculating its DQO or LCL. This exception is limited solely to test runs involving the types of errors identified above.

2.7 All valid test runs that are conducted must be included in the average CE determination. The individual test run CE results and average CE results cannot be truncated (i.e., 105 percent cannot be reported as 100+ percent) for purposes of meeting general or specific criteria for either the DQO or the LCL. If the DQO is satisfied and the average CE is greater than 100, then 100 percent CE must be considered the result of the test.

2.8 Alternative test methods for measuring VOC concentration must include a three-point calibration of the gas analysis instrument in the expected concentration range.

3. Data Quality Objective Approach

3.1 The purpose of the DQO is to allow sources to use alternative CE protocols and test methods while ensuring reasonable precision consistent with pertinent requirements of the Clean Air Act. In addition to the general criteria described in section 2, the specific DQO criterion is that the width of the two-sided 95 percent confidence interval of the mean measured value must be less than or equal to 10 percent of the mean measured value (see Figure 1). This ensures that 95 percent of the time, when the DQO is met, the actual CE value will be  $\pm 5$  percent of the mean measured value (assuming that the test protocol is unbiased).

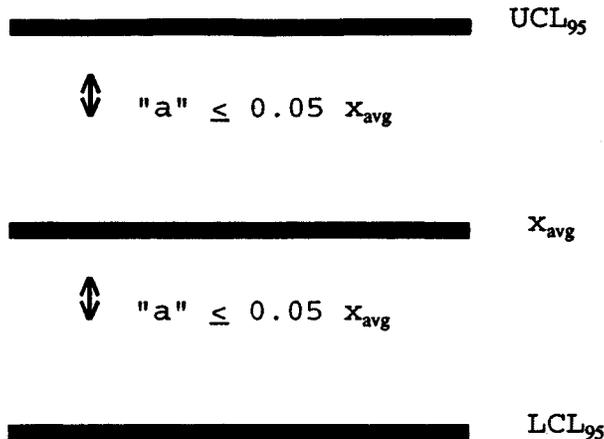


Table 1.—T-Values

3.2 The DQO calculation is made as follows using Equations 1 and 2:

$$P = \frac{a}{x_{avg}} 100 \quad \text{Eq 1}$$

$$a = \frac{t_{0.975} s}{\sqrt{n}} \quad \text{Eq 2}$$

Where:

a=distance from the average measured CE value to the endpoints of the 95-percent (two-sided) confidence interval for the measured value.

n=number of valid test runs.

P=DQO indicator statistic, distance from the average measured CE value to the endpoints of the 95-percent (two-sided) confidence interval, expressed as a percent of the average measured CE value.

s=sample standard deviation.

t<sub>0.975</sub>=t-value at the 95-percent confidence level (see Table 1).

x<sub>avg</sub>=average measured CE value (calculated from all valid test runs).

x<sub>i</sub>=the CE value calculated from the ith test run.

| Number of valid test runs, n | t <sub>0.975</sub> | t <sub>0.90</sub> | Number of valid test runs, n | t <sub>0.975</sub> | t <sub>0.90</sub> |
|------------------------------|--------------------|-------------------|------------------------------|--------------------|-------------------|
| 1 or 2                       | N/A                | N/A               | 12                           | 2.201              | 1.363             |
| 3                            | 4.303              | 1.886             | 13                           | 2.179              | 1.356             |
| 4                            | 3.182              | 1.638             | 14                           | 2.160              | 1.350             |
| 5                            | 2.776              | 1.533             | 15                           | 2.145              | 1.345             |
| 6                            | 2.571              | 1.476             | 16                           | 2.131              | 1.341             |
| 7                            | 2.447              | 1.440             | 17                           | 2.120              | 1.337             |
| 8                            | 2.365              | 1.415             | 18                           | 2.110              | 1.333             |
| 9                            | 2.306              | 1.397             | 19                           | 2.101              | 1.330             |
| 10                           | 2.262              | 1.383             | 20                           | 2.093              | 1.328             |
| 1                            | 12.228             | 1.372             | 21                           | 2.086              | 1.325             |

3.3 The sample standard deviation and average CE value are calculated using Equations 3 and 4 as follows:

$$s = \left[ \frac{\sum_{i=1}^n (x_i - x_{avg})^2}{n - 1} \right]^{0.5} \quad \text{Eq 3}$$

$$x_{avg} = \frac{\sum_{i=1}^n x_i}{n} \quad \text{Eq 4}$$

3.4 The DQO criteria are achieved when all of the general criteria in section 2 are achieved and P ≤5 percent (i.e., the specific DQO criterion is achieved). In order to meet this objective, facilities may have to conduct more than three test runs. Examples of cal-

culating P, given a finite number of test runs, are shown below. (For purposes of this example it is assumed that all of the general criteria are met.)

3.5 Facility A conducted a CE test using a traditional liquid/gas mass balance and submitted the following results and the calculations shown in Equations 5 and 6:

| Run | CE    |
|-----|-------|
| 1   | 96.1  |
| 2   | 105.0 |
| 3   | 101.2 |

Therefore:

n=3  
t<sub>0.975</sub>=4.30  
x<sub>avg</sub>=100.8  
s=4.51

$$a = \frac{(4.30)(4.51)}{\sqrt{3}} = 11.20 \quad \text{Eq 5}$$

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Table 1.—T-Values

$$P = \frac{11.2}{100.8} 100 = 11.11 \quad \text{Eq 6}$$

3.6 Since the facility did not meet the specific DQO criterion, they ran three more test runs.

| Run     | CE   |
|---------|------|
| 4 ..... | 93.2 |
| 5 ..... | 96.2 |
| 6 ..... | 87.6 |

3.7 The calculations for Runs 1-6 are made as follows using Equations 7 and 8:

n=6  
 $t_{0.975}=2.57$   
 $x_{avg}=96.6$   
 $s=6.11$

$$a = \frac{(2.57)(6.11)}{\sqrt{6}} = 6.41 \quad \text{Eq 7}$$

$$P = \frac{6.41}{96.6} 100 = 6.64 \quad \text{Eq 8}$$

3.8 The facility still did not meet the specific DQO criterion. They ran three more test runs with the following results:

| Run     | CE   |
|---------|------|
| 7 ..... | 92.9 |
| 8 ..... | 98.3 |
| 9 ..... | 91.0 |

3.9 The calculations for Runs 1-9 are made as follows using Equations 9 and 10:

n=9  
 $t_{0.975}=2.31$   
 $x_{avg}=95.7$   
 $s=5.33$

$$a = \frac{(2.31)(5.33)}{\sqrt{9}} = 4.10 \quad \text{Eq 9}$$

$$P = \frac{4.10}{95.7} 100 = 4.28 \quad \text{Eq 10}$$

3.10 Based on these results, the specific DQO criterion is satisfied. Since all of the general criteria were also satisfied, the average CE from the nine test runs can be used to determine compliance.

4. Lower Confidence Limit Approach

4.1 The purpose of the LCL approach is to provide sources, that may be performing much better than their applicable regulatory requirement, a screening option by which they can demonstrate compliance. The approach uses less precise methods and avoids

additional test runs which might otherwise be needed to meet the specific DQO criterion while still being assured of correctly demonstrating compliance. It is designed to reduce "false positive" or so called "Type II errors" which may erroneously indicate compliance where more variable test methods are employed. Because it encourages CE performance greater than that required in exchange for reduced compliance demonstration burden, the sources that successfully use the LCL approach could produce emission reductions beyond allowable emissions. Thus, it could provide additional benefits to the environment as well.

4.2 The LCL approach compares the 80 percent (two-sided) LCL for the mean measured CE value to the applicable CE regulatory requirement. In addition to the general criteria described in section 2, the specific LCL criteria are that either the LCL be greater than or equal to the applicable CE regulatory requirement or that the specific DQO criterion is met. A more detailed description of the LCL approach follows:

4.3 A source conducts an initial series of at least three runs. The owner or operator may choose to conduct additional test runs during the initial test if desired.

4.4 If all of the general criteria are met and the specific DQO criterion is met, then the average CE value is used to determine compliance.

4.5 If the data meet all of the general criteria, but do not meet the specific DQO criterion; and the average CE, using all valid test runs, is above 100 percent then the test sequence cannot be used to calculate the LCL. At this point the facility has the option of (a) conducting more test runs in hopes of meeting the DQO or of bringing the average CE for all test runs below 100 percent so the LCL can be used or (b) discarding all previous test data and retesting.

4.6 The purpose of the requirement in Section 4.5 is to protect against protocols and test methods which may be inherently biased high. This is important because it is impossible to have an actual CE greater than 100 percent and the LCL approach only looks at the lower end variability of the test results. This is different from the DQO which allows average CE values up to 105 percent because the DQO sets both upper and lower limits on test variability.

4.7 If at any point during testing the results meet the DQO, the average CE can be used for demonstrating compliance with the applicable regulatory requirement. Similarly, if the average CE is below 100 percent then the LCL can be used for demonstrating compliance with the applicable regulatory requirement without regard to the DQO.

4.8 The LCL is calculated at a 80 percent (two-sided) confidence level as follows using Equation 11:

Table 1.—T-Values

$$LC_1 = x_{avg} - \frac{t_{0.90}S}{\sqrt{n}} \quad \text{Eq 11}$$

Where:

- LC<sub>1</sub>=LCL at a 80 percent (two-sided) confidence level.
- n=number of valid test runs.
- s=sample standard deviation.
- t<sub>0.90</sub>=t-value at the 80-percent (two-sided) confidence level (see Table 3-1).
- x<sub>avg</sub>=average measured CE value (calculated from all valid test runs).

4.9 The resulting LC<sub>1</sub> is compared to the applicable CE regulatory requirement. If LC<sub>1</sub> exceeds (i.e., is higher than) the applicable regulatory requirement, then a facility is in initial compliance. However, if the LC<sub>1</sub> is below the CE requirement, then the facility must conduct additional test runs. After this point the test results will be evaluated not only looking at the LCL, but also the DQO of ±5 percent of the mean at a 95 percent confidence level. If the test results with the additional test runs meet the DQO before the LCL exceeds the applicable CE regulatory requirement, then the average CE value will be compared to the applicable CE regulatory requirement for determination of compliance.

4.10 If there is no specific CE requirement in the applicable regulation, then the applicable CE regulatory requirement is deter-

mined based on the applicable regulation and an acceptable destruction efficiency test. If the applicable regulation requires daily compliance and the latest CE compliance demonstration was made using the LCL approach, then the calculated LC<sub>1</sub> will be the highest CE value which a facility is allowed to claim until another CE demonstration test is conducted. This last requirement is necessary to assure both sufficiently reliable test results in all circumstances and the potential environmental benefits referenced above.

4.11 An example of calculating the LCL is shown below. Facility B's applicable regulatory requirement is 85 percent CE. Facility B conducted a CE test using a traditional liquid/gas mass balance and submitted the following results and the calculation shown in Equation 12:

| Run     | CE   |
|---------|------|
| 1 ..... | 94.2 |
| 2 ..... | 97.6 |
| 3 ..... | 90.5 |

Therefore:

- n=3
- t<sub>0.90</sub>=1.886
- x<sub>avg</sub>=94.1
- s=3.55

$$LC_1 = 94.1 - \frac{(1.886)(3.55)}{\sqrt{3}} = 90.23 \quad \text{Eq 12}$$

4.12 Since the LC<sub>1</sub> of 90.23 percent is above the applicable regulatory requirement of 85 percent then the facility is in compliance. The facility must continue to accept the LC<sub>1</sub> of 90.23 percent as its CE value until a new series of valid tests is conducted. (The data generated by Facility B do not meet the specific DQO criterion.)

*5. Recommended Reporting for Alternative CE Protocols*

5.1 If a facility chooses to use alternative CE protocols and test methods that satisfy either the DQO or LCL and the additional criteria in section 4., the following information should be submitted with each test report to the appropriate regulatory agency:

1. A copy of all alternative test methods, including any changes to the EPA reference methods, QA/QC procedures and calibration procedures.
2. A table with information on each liquid sample, including the sample identification, where and when the sample was taken, and the VOC content of the sample;

3. The coating usage for each test run (for protocols in which the liquid VOC input is to be determined);

4. The quantity of captured VOC measured for each test run;

5. The CE calculations and results for each test run;

6. The DQO or LCL calculations and results; and

7. The QA/QC results, including information on calibrations (e.g., how often the instruments were calibrated, the calibration results, and information on calibration gases, if applicable).

*6. Recommended Recordkeeping for Alternative CE Protocols.*

6.1 A record should be kept at the facility of all raw data recorded during the test in a suitable form for submittal to the appropriate regulatory authority upon request.

## Subparts LL–NN [Reserved]

## Subpart OO—National Emission Standards for Tanks—Level 1

SOURCE: 61 FR 34184, July 1, 1996, unless otherwise noted.

**§ 63.900 Applicability.**

The provisions of this subpart apply to the control of air emissions from tanks for which another subpart of 40 CFR parts 60, 61, or 63 references the use of this subpart for such air emission control. These air emission standards for tanks are placed here for administrative convenience and only apply to those owners and operators of facilities subject to the other subparts that reference this subpart. The provisions of 40 CFR part 63, subpart A—General Provisions do not apply to this subpart except as noted in the subpart that references this subpart.

**§ 63.901 Definitions.**

All terms used in this subpart shall have the meaning given to them in the Act and in this section. If a term is defined in both this section and in another subpart that references the use of this subpart, then the definition in this subpart shall take precedence when implementing this subpart.

*Closure device* means a cap, hatch, lid, plug, seal, valve, or other type of fitting that, when the device is secured in the closed position, prevents or reduces air emissions to the atmosphere by blocking an opening in a fixed roof. Closure devices include devices that are detachable from the cover (e.g., a sampling port cap), manually operated (e.g., a hinged access lid or hatch), or automatically operated (e.g., a spring-loaded pressure relief valve).

*Fixed roof* means a cover that is mounted on a tank in a stationary position and does not move with fluctuations in the level of the liquid managed in the tank.

*No detectable organic emissions* means no escape of organics to the atmosphere as determined using the procedure specified in § 63.905(a) of this subpart.

*Regulated-material* means the material (e.g. waste, wastewater, off-site

material) required to be managed in tanks using air emission controls in accordance with the standards specified in this subpart.

*Safety device* means a closure device such as a pressure relief valve, frangible disc, fusible plug, or any other type of device which functions exclusively to prevent physical damage or permanent deformation to the tank air emission control equipment by venting gases or vapors directly to the atmosphere during unsafe conditions resulting from an unplanned, accidental, or emergency event. For the purpose of this subpart, a safety device is not used for routine venting of gases or vapors from the vapor headspace underneath the tank cover. A safety device is designed to remain in a closed position during normal operations and open only when the internal pressure, or another relevant parameter, exceeds the device threshold setting applicable to the air emission control equipment as determined by the owner or operator based on manufacturer recommendations, applicable regulations, fire protection and prevention codes, standard engineering codes and practices, or other requirements for the safe handling of flammable, ignitable, explosive, reactive, or hazardous materials.

*Tank* means a stationary unit that is constructed primarily of nonearthen materials (such as wood, concrete, steel, fiberglass, or plastic) which provide structural support and is designed to hold an accumulation of liquids or other materials.

**§ 63.902 Standards—Tank fixed roof.**

(a) This section applies to owners and operators subject to this subpart and controlling air emissions from a tank using a fixed roof.

(b) The tank shall be equipped with a fixed roof designed to meet the following specifications:

(1) The fixed roof and its closure devices shall be designed to form a continuous barrier over the entire surface area of the liquid in the tank. The fixed roof may be a separate cover installed on the tank (e.g., a removable cover mounted on an open-top tank) or may be an integral part of the tank structural design (e.g., a horizontal cylindrical tank equipped with a hatch).

(2) The fixed roof shall be installed in a manner such that there are no visible cracks, holes, gaps, or other open spaces between roof section joints or between the interface of the roof edge and the tank wall.

(3) Each opening in the fixed roof shall be either:

(i) equipped with a closure device designed to operate such that when the closure device is secured in the closed position there are no visible cracks, holes, gaps, or other open spaces in the closure device or between the perimeter of the opening and the closure device; or

(ii) connected by a closed-vent system that is vented to a control device. The control device shall remove or destroy organics in the vent stream, and shall be operating whenever regulated material is managed in the tank.

(4) The fixed roof and its closure devices shall be made of suitable materials that will minimize exposure of the regulated-material to the atmosphere, to the extent practical, and will maintain the integrity of the equipment throughout its intended service life. Factors to be considered when selecting the materials for and designing the fixed roof and closure devices shall include: organic vapor permeability, the effects of any contact with the liquid or its vapors managed in the tank; the effects of outdoor exposure to wind, moisture, and sunlight; and the operating practices used for the tank on which the fixed roof is installed.

(c) Whenever a regulated-material is in the tank, the fixed roof shall be installed with each closure device secured in the closed position except as follows:

(1) Opening of closure devices or removal of the fixed roof is allowed at the following times:

(i) To provide access to the tank for performing routine inspection, maintenance, or other activities needed for normal operations. Examples of such activities include those times when a worker needs to open a port to sample the liquid in the tank, or when a worker needs to open a hatch to maintain or repair equipment. Following completion of the activity, the owner or operator shall promptly secure the closure device in the closed position or re-

install the cover, as applicable, to the tank.

(ii) To remove accumulated sludge or other residues from the bottom of tank.

(2) Opening of a spring-loaded pressure-vacuum relief valve, conservation vent, or similar type of pressure relief device which vents to the atmosphere is allowed during normal operations for the purpose of maintaining the tank internal pressure in accordance with the tank design specifications. The device shall be designed to operate with no detectable organic emissions when the device is secured in the closed position. The settings at which the device opens shall be established such that the device remains in the closed position whenever the tank internal pressure is within the internal pressure operating range determined by the owner or operator based on the tank manufacturer recommendations, applicable regulations, fire protection and prevention codes, standard engineering codes and practices, or other requirements for the safe handling of flammable, combustible, explosive, reactive, or hazardous materials. Examples of normal operating conditions that may require these devices to open are during those times when the container internal pressure exceeds the internal pressure operating range for the tank as a result of loading operations or diurnal ambient temperature fluctuations.

(3) Opening of a safety device, as defined in §63.901 of this subpart, is allowed at any time conditions require it to do so to avoid an unsafe condition.

(d) The owner or operator shall inspect the air emission control equipment in accordance with the requirements specified in §63.906(a) of this subpart.

#### §§ 63.903–63.904 [Reserved]

#### § 63.905 Test methods and procedures.

(a) Procedure for determining no detectable organic emissions for the purpose of complying with this subpart.

(1) The test shall be conducted in accordance with the procedures specified in Method 21 of 40 CFR part 60, appendix A. Each potential leak interface (i.e., a location where organic vapor leakage could occur) on the cover and

associated closure devices shall be checked. Potential leak interfaces that are associated with covers and closure devices include, but are not limited to: the interface of the cover and its foundation mounting; the periphery of any opening on the cover and its associated closure device; and the sealing seat interface on a spring-loaded pressure-relief valve.

(2) The test shall be performed when the tank contains a material having an organic HAP concentration representative of the range of concentrations for the regulated-materials expected to be managed in the tank. During the test, the cover and closure devices shall be secured in the closed position.

(3) The detection instrument shall meet the performance criteria of Method 21 of 40 CFR part 60, appendix A, except the instrument response factor criteria in section 3.1.2(a) of Method 21 shall be for the average composition of the organic constituents in the regulated-material placed in the tank, not for each individual organic constituent.

(4) The detection instrument shall be calibrated before use on each day of its use by the procedures specified in Method 21 of 40 CFR part 60, appendix A.

(5) Calibration gases shall be as follows:

- (i) Zero air (less than 10 ppmv hydrocarbon in air); and
- (ii) A mixture of methane in air at a concentration less than 10,000 ppmv.

(6) The background level shall be determined according to the procedures in Method 21 of 40 CFR part 60 appendix A.

(7) Each potential leak interface shall be checked by traversing the instrument probe around the potential leak interface as close to the interface as possible, as described in Method 21. In the case when the configuration of the cover or closure device prevents a complete traverse of the interface, all accessible portions of the interface shall be sampled. In the case when the configuration of the closure device prevents any sampling at the interface and the device is equipped with an enclosed extension or horn (e.g., some pressure relief devices), the instrument probe inlet shall be placed at approxi-

mately the center of the exhaust area to the atmosphere.

(8) The arithmetic difference between the maximum organic concentration indicated by the instrument and the background level shall be compared with the value of 500 ppmv. If the difference is less than 500 ppmv, then the potential leak interface is determined to operate with no detectable organic emissions.

(b) [Reserved]

#### **§ 63.906 Inspection and monitoring requirements.**

(a) Owners and operators that use a tank equipped with a fixed roof in accordance with the provisions of § 63.902 of this subpart shall meet the following requirements:

(1) The fixed roof and its closure devices shall be visually inspected by the owner or operator to check for defects that could result in air emissions. Defects include, but are not limited to, visible cracks, holes, or gaps in the roof sections or between the roof and the tank wall; broken, cracked, or otherwise damaged seals or gaskets on closure devices; and broken or missing hatches, access covers, caps, or other closure devices.

(2) The owner or operator shall perform the inspections following installation of the fixed roof and, thereafter, at least once every year.

(3) In the event that a defect is detected, the owner or operator shall repair the defect in accordance with the requirements of paragraph (b) of this section.

(4) The owner or operator shall maintain a record of the inspection in accordance with the requirements specified in § 63.907 (a) of this subpart.

(b) The owner or operator shall repair all detected defects as follows:

(1) The owner or operator shall make first efforts at repair of the defect no later than 5 calendar days after detection and repair shall be completed as soon as possible but no later than 45 calendar days after detection except as provided in paragraph (b)(2) of this section.

(2) Repair of a defect may be delayed beyond 45 calendar days if the owner or operator determines that repair of the defect requires emptying or temporary

removal from service of the tank and no alternative tank capacity is available at the site to accept the regulated-material normally managed in the tank. In this case, the owner or operator shall repair the defect the next time the process or unit that is generating the regulated-material managed in the tank stops operation. Repair of the defect shall be completed before the process or unit resumes operation.

(c) The owner or operator shall maintain a record of the defect repair in accordance with the requirements specified in § 63.907(b) of this subpart.

**§ 63.907 Recordkeeping requirements.**

(a) Each owner or operator shall prepare and maintain a record for each tank that includes the following information:

(1) A tank identification number (or other unique identification description as selected by the owner or operator).

(2) A description of the tank dimensions and the tank design capacity.

(3) The date that each inspection required by § 63.906 of this subpart is performed.

(b) The owner or operator shall record the following information for each defect detected during inspections required by § 63.906 of this subpart: the location of the defect, a description of the defect, the date of detection, and corrective action taken to repair the defect. In the event that repair of the defect is delayed in accordance with the provisions of § 63.907(b)(2) of this section, the owner or operator shall also record the reason for the delay and the date that completion of repair of the defect is expected.

**Subpart PP—National Emission Standards for Containers**

SOURCE: 61 FR 34186, July 1, 1996, unless otherwise noted.

**§ 63.920 Applicability.**

The provisions of this subpart apply to the control of air emissions from containers for which another subpart of 40 CFR parts 60, 61, or 63 references the use of this subpart for such air emission control. These air emission standards for containers are placed

here for administrative convenience and only apply to those owners and operators of facilities subject to the other subparts that reference this subpart. The provisions of 40 CFR Part 63, subpart A—General Provisions do not apply to this subpart except as noted in the subpart that references this subpart.

**§ 63.921 Definitions.**

All terms used in this subpart shall have the meaning given to them in the Act and in this section. If a term is defined in both this section and in another subpart that references the use of this subpart, then the definition in this subpart shall take precedence when implementing this subpart.

*Container* means a portable unit in which a material can be stored, transported, treated, disposed of, or otherwise handled. Examples of containers include but are not limited to drums, dumpsters, roll-off boxes, bulk cargo containers commonly known as “portable tanks” or “totes,” cargo tank trucks, and tank railcars.

*Closure device* means a cover, cap, hatch, lid, plug, seal, valve, or other type of fitting that prevents or reduces air emissions to the atmosphere by blocking an opening in a container or its cover when the device is secured in the closed position. Closure devices include devices that are detachable from the container (e.g., a drum head, a threaded plug), manually operated (e.g., a hinged dumpster lid, a truck tank hatch), or automatically operated (e.g., a spring loaded pressure relief valve).

*Empty container* means a container for which either of the following conditions exists, as applicable: the regulated-material is a hazardous waste and the container meets the conditions for an empty container specified in 40 CFR 261.7(b); or all regulated-material has been removed from the container except for any regulated-material that remains on the interior surfaces of the container as clingage or in pools on the container bottom due to irregularities in the container.

*No detectable organic emissions* means no escape of organics to the atmosphere as determined using the procedure specified in § 63.925(a) of this subpart.

*Regulated-material* means the material (e.g. waste, wastewater, off-site material) required to be managed in containers using air emission controls in accordance with the standards specified in this subpart.

*Safety device* means a closure device such as a pressure relief valve, frangible disc, fusible plug, or any other type of device which functions exclusively to prevent physical damage or permanent deformation to a container or its air emission control equipment by venting gases or vapors directly to the atmosphere during unsafe conditions resulting from an unplanned, accidental, or emergency event. For the purpose of this subpart, a safety device is not used for routine venting of gases or vapors from the container such as during filling of the container or to adjust the internal pressure of the container in response to normal daily diurnal ambient temperature fluctuations. A safety device is designed to remain in a closed position during normal operations and open only when the internal pressure, or another relevant parameter, exceeds the device threshold setting applicable to the container and its air emission control equipment as determined by the owner or operator based on manufacturer recommendations, applicable regulations, fire protection and prevention codes, standard engineering codes and practices, or other requirements for the safe handling of flammable, ignitable, explosive, reactive, or hazardous materials.

**§ 63.922 Standards—Container Level 1 controls.**

(a) This section applies to owners and operators subject to this subpart and required to control air emissions from containers using Container Level 1 controls.

(b) A container using Container Level 1 controls is one of the following:

(1) A container that meets the applicable U.S. Department of Transportation (DOT) regulations on packaging hazardous materials for transportation

as specified in paragraph (f) of this section.

(2) A container equipped with a cover and closure devices that form a continuous barrier over the container openings such that when the cover and closure devices are secured in the closed position there are no visible holes, gaps, or other open spaces into the interior of the container. The cover may be a separate cover installed on the container (e.g., a lid on a drum, a suitably secured tarp on a roll-off box) or may be an integral part of the container structural design (e.g., a bulk cargo container equipped with a screw-type cap).

(3) An open-top container in which an organic vapor-suppressing barrier is placed on or over the regulated-material in the container such that no regulated-material is exposed to the atmosphere. One example of such a barrier is application of a suitable organic-vapor suppressing foam.

(c) A container used to meet the requirements of either paragraph (b)(2) or (b)(3) of this section shall be equipped with covers and closure devices, as applicable to the container, that are composed of suitable materials to minimize exposure of the regulated-material to the atmosphere and to maintain the equipment integrity for as long as it is in service. Factors to be considered when selecting the materials for and designing the cover and closure devices shall include: organic vapor permeability, the effects of contact with the material or its vapor managed in the container; the effects of outdoor exposure to wind, moisture, and sunlight; and the operating practices used for container on which the cover is installed.

(d) Whenever a regulated-material is in a container using Container Level 1 controls, the owner or operator shall install all covers and closure devices for the container, and secure and maintain each closure device in the closed position except as follows:

(1) Opening of a closure device or cover is allowed for the purpose of adding material to the container as follows:

(i) In the case when the container is filled to the intended final level in one

continuous operation, the owner or operator shall promptly secure the closure devices in the closed position and install the covers, as applicable to the container, upon conclusion of the filling operation.

(ii) In the case when discrete quantities or batches of material intermittently are added to the container over a period of time, the owner or operator shall promptly secure the closure devices in the closed position and install covers, as applicable to the container, upon either: the container being filled to the intended final level; the completion of a batch loading after which no additional material will be added to the container within 15 minutes; the person performing the loading operation leaves the immediate vicinity of the container; or the shutdown of the process generating the material being added to the container, whichever condition occurs first.

(2) Opening of a closure device or cover is allowed for the purpose of removing material from the container as follows:

(i) For the purpose of meeting the requirements of this section, an empty container as defined in §63.921 of this subpart may be open to the atmosphere at any time (e.g., covers and closure devices are not required to be secured in the closed position on an empty container).

(ii) In the case when discrete quantities or batches of material are removed from the container but the container does not meet the conditions to be an empty container as defined in §63.921 of this subpart, the owner or operator shall promptly secure the closure devices in the closed position and install covers, as applicable to the container, upon the completion of a batch removal after which no additional material will be removed from the container within 15 minutes, or the person performing the unloading operation leaves the immediate vicinity of the container, whichever condition occurs first.

(3) Opening of a closure device or cover is allowed when access inside the container is needed to perform routine activities other than transfer of regulated-material. Examples of such activities include those times when a

worker needs to open a port to measure the depth of or sample the material in the container, or when a worker needs to open a manhole hatch to access equipment inside the container. Following completion of the activity, the owner or operator shall promptly secure the closure device in the closed position or reinstall the cover, as applicable to the container.

(4) Opening of a spring-loaded pressure-vacuum relief valve, conservation vent, or similar type of pressure relief device which vents to the atmosphere is allowed during normal operations for the purpose of maintaining the container internal pressure in accordance with the container design specifications. The device shall be designed to operate with no detectable organic emissions when the device is secured in the closed position. The settings at which the device opens shall be established such that the device remains in the closed position whenever the container internal pressure is within the internal pressure operating range determined by the owner or operator based on container manufacturer recommendations, applicable regulations, fire protection and prevention codes, standard engineering codes and practices, or other requirements for the safe handling of flammable, ignitable, explosive, reactive, or hazardous materials. Examples of normal operating conditions that may require these devices to open are during those times when the container internal pressure exceeds the internal pressure operating range for the container as a result of loading operations or diurnal ambient temperature fluctuations.

(5) Opening of a safety device, as defined in §63.921 of this subpart, is allowed at any time conditions require it to do so to avoid an unsafe condition.

(e) The owner or operator shall inspect containers using Container Level 1 controls in accordance with the procedures specified in §63.926(a) of this subpart.

(f) For the purpose of compliance with paragraph (b)(1) of this section, containers shall be used that meet the applicable U.S. DOT regulations on packaging hazardous materials for transportation as follows:

(1) The container meets the applicable requirements specified in 49 CFR part 178—Specifications for Packagings or 49 CFR part 179—Specifications for Tank Cars.

(2) Regulated-material is managed in the container in accordance with the applicable requirements specified in 49 CFR part 107 subpart B—Exemptions; 49 CFR part 172—Hazardous Materials Table, Special Provisions, Hazardous Materials Communications, Emergency Response Information, and Training Requirements; 49 CFR part 173—Shippers—General Requirements for Shipments and Packaging; and 49 CFR part 180—Continuing Qualification and Maintenance of Packagings.

(3) For the purpose of complying with this subpart, no exceptions to the 49 CFR part 178 or part 179 regulations are allowed except as provided for in paragraph (f)(4) of this section.

(4) For a lab pack that is managed in accordance with the requirements of 49 CFR part 178 for the purpose of complying with this subpart, an owner or operator may comply with the exceptions for those packagings specified in 49 CFR 173.12(b).

**§ 63.923 Standards—Container Level 2 controls.**

(a) This section applies to owners and operators subject to this subpart and required to control air emissions from containers using Container Level 2 controls.

(b) A container using Container Level 2 controls is one of the following:

(1) A container that meets the applicable U.S. Department of Transportation (DOT) regulations on packaging hazardous materials for transportation as specified in paragraph (f) of this section.

(2) A container that has been demonstrated to operate with no detectable organic emissions as defined in § 63.921 of this subpart.

(3) A container that has been demonstrated within the preceding 12 months to be vapor-tight by using Method 27 in Appendix A of 40 CFR part 60 in accordance with the procedure specified in § 63.925(b) of this subpart.

(c) Transfer of regulated-material in to or out of a container using Con-

tainer Level 2 controls shall be conducted in such a manner as to minimize exposure of the regulated-material to the atmosphere, to the extent practical, considering the physical properties of the regulated-material and good engineering and safety practices for handling flammable, ignitable, explosive, or other hazardous materials. Examples of container loading procedures that meet the requirements of this paragraph include using any one of the following: a submerged-fill pipe or other submerged-fill method to load liquids into the container; a vapor-balancing system or a vapor-recovery system to collect and control the vapors displaced from the container during filling operations; or a fitted opening in the top of a container through which the regulated-material is filled, with subsequent purging of the transfer line before removing it from the container opening.

(d) Whenever a regulated-material is in a container using Container Level 2 controls, the owner or operator shall install all covers and closure devices for the container, and secure and maintain each closure device in the closed position except as follows:

(1) Opening of a closure device or cover is allowed for the purpose of adding material to the container as follows:

(i) In the case when the container is filled to the intended final level in one continuous operation, the owner or operator shall promptly secure the closure devices in the closed position and install the covers, as applicable to the container, upon conclusion of the filling operation.

(ii) In the case when discrete quantities or batches of material intermittently are added to the container over a period of time, the owner or operator shall promptly secure the closure devices in the closed position and install covers, as applicable to the container, upon either the container being filled to the intended final level, the completion of a batch loading after which no additional material will be added to the container within 15 minutes, the person performing the loading operation leaves the immediate vicinity of the container, or the shutdown of the process generating the material being

added to the container, whichever condition occurs first.

(2) Opening of a closure device or cover is allowed for the purpose of removing material from the container as follows:

(i) For the purpose of meeting the requirements of this section, an empty container as defined in §63.921 of this subpart may be open to the atmosphere at any time (e.g., covers and closure devices are not required to be secured in the closed position on an empty container).

(ii) In the case when discrete quantities or batches of material are removed from the container but the container does not meet the conditions to be an empty container as defined in §63.921 of this subpart, the owner or operator shall promptly secure the closure devices in the closed position and install covers, as applicable to the container, upon the completion of a batch removal after which no additional material will be removed from the container within 15 minutes or the person performing the unloading operation leaves the immediate vicinity of the container, whichever condition occurs first.

(3) Opening of a closure device or cover is allowed when access inside the container is needed to perform routine activities other than transfer of regulated-material. Examples of such activities include those times when a worker needs to open a port to measure the depth of or sample the material in the container, or when a worker needs to open a manhole hatch to access equipment inside the container. Following completion of the activity, the owner or operator shall promptly secure the closure device in the closed position or reinstall the cover, as applicable to the container.

(4) Opening of a spring-loaded pressure-vacuum relief valve, conservation vent, or similar type of pressure relief device which vents to the atmosphere is allowed during normal operations for the purpose of maintaining the container internal pressure in accordance with the container design specifications. The device shall be designed to operate with no detectable organic emissions when the device is secured in the closed position. The settings at

which the device opens shall be established such that the device remains in the closed position whenever the container internal pressure is within the internal pressure operating range determined by the owner or operator based on container manufacturer recommendations, applicable regulations, fire protection and prevention codes, standard engineering codes and practices, or other requirements for the safe handling of flammable, combustible, explosive, reactive, or hazardous materials. Examples of normal operating conditions that may require these devices to open are during those times when the container internal pressure exceeds the internal pressure operating range for the container as a result of loading operations or diurnal ambient temperature fluctuations.

(5) Opening of a safety device, as defined in §63.921 of this subpart, is allowed at any time conditions require it to do so to avoid an unsafe condition.

(e) The owner or operator shall inspect containers using Container Level 2 controls in accordance with the procedures specified in §63.926(a) of this subpart.

(f) For the purpose of compliance with paragraph (b)(1) of this section, containers shall be used that meet the applicable U.S. DOT regulations on packaging hazardous materials for transportation as follows:

(1) The container meets the applicable requirements specified in 49 CFR part 178—Specifications for Packagings or 49 CFR part 179—Specifications for Tank Cars.

(2) Regulated-material is managed in the container in accordance with the applicable requirements specified in 49 CFR part 107 subpart B—Exemptions; 49 CFR part 172—Hazardous Materials Table, Special Provisions, Hazardous Materials Communications, Emergency Response Information, and Training Requirements; 49 CFR part 173—Shippers—General Requirements for Shipments and Packaging; and 49 CFR part 180—Continuing Qualification and Maintenance of Packagings.

(3) For the purpose of complying with this subpart, no exceptions to the 49 CFR part 178 or part 179 regulations are allowed except as provided for in paragraph (f)(4) of this section.

(4) For a lab pack that is managed in accordance with the requirements of 49 CFR part 178 for the purpose of complying with this subpart, an owner or operator may comply with the exceptions for those packagings specified in 49 CFR 173.12(b).

**§63.924 Standards—Container Level 3 controls.**

(a) This section applies to owners and operators subject to this subpart and required to control air emissions from containers using Container Level 3 controls.

(b) A container using Container Level 3 controls is one of the following:

(1) A container that is vented directly through a closed-vent system to a control device in accordance with the requirements of paragraphs (c)(2) of this section.

(2) A container that is vented inside an enclosure which is exhausted through a closed-vent system to a control device in accordance with the requirements of paragraphs (c)(1) and (c)(2) of this section.

(c) The owner or operator shall meet the following requirements as applicable to the type of air emission control equipment selected by the owner or operator:

(1) The enclosure shall be designed and operated in accordance with the criteria for a permanent total enclosure as specified in "Procedure T—Criteria for and Verification of a Permanent or Temporary Total Enclosure" under 40 CFR 52.741, Appendix B. The enclosure may have permanent or temporary openings to allow worker access; passage of containers through the enclosure by conveyor or other mechanical means; entry of permanent mechanical or electrical equipment; or to direct airflow into the enclosure. The owner or operator shall perform the verification procedure for the enclosure as specified in Section 5.0 to "Procedure T—Criteria for and Verification of a Permanent or Temporary Total Enclosure" initially when the enclosure is first installed and, thereafter, annually.

(2) The closed-vent system and control device shall be designed and operated in accordance with the requirements of 40 CFR 63.692.

(d) Safety devices, as defined in §63.921 of this subpart, may be installed and operated as necessary on any container, enclosure, closed-vent system, or control device used to comply with this section.

**§63.925 Test methods and procedures.**

(a) Procedure for determining no detectable organic emissions for the purpose of complying with of this subpart.

(1) The test shall be conducted in accordance with the procedures specified in Method 21 of 40 CFR part 60, appendix A. Each potential leak interface (i.e., a location where organic vapor leakage could occur) on the container, its cover, and associated closure devices, as applicable to the container, shall be checked. Potential leak interfaces that are associated with containers include, but are not limited to: the interface of the cover rim and the container wall; the periphery of any opening on the container or container cover and its associated closure device; and the sealing seat interface on a spring-loaded pressure-relief valve.

(2) The test shall be performed when the container filled with a material having an organic HAP concentration representative of the range of concentrations for the regulated-materials expected to be managed in this type of container. During the test, the container cover and closure devices shall be secured in the closed position.

(3) The detection instrument shall meet the performance criteria of Method 21 of 40 CFR part 60, appendix A, except the instrument response factor criteria in section 3.1.2(a) of Method 21 shall be for the average composition of the organic constituents in the material placed in the container, not for each individual organic constituent.

(4) The detection instrument shall be calibrated before use on each day of its use by the procedures specified in Method 21 of 40 CFR part 60, appendix A.

(5) Calibration gases shall be as follows:

(i) Zero air (less than 10 ppmv hydrocarbon in air); and

(ii) A mixture of methane in air at a concentration of approximately, but less than 10,000 ppmv.

(6) The background level shall be determined according to the procedures in Method 21 of 40 CFR part 60 appendix A.

(7) Each potential leak interface shall be checked by traversing the instrument probe around the potential leak interface as close to the interface as possible, as described in Method 21. In the case when the configuration of the cover or closure device prevents a complete traverse of the interface, all accessible portions of the interface shall be sampled. In the case when the configuration of the closure device prevents any sampling at the interface and the device is equipped with an enclosed extension or horn (e.g., some pressure relief devices), the instrument probe inlet shall be placed at approximately the center of the exhaust area to the atmosphere.

(8) The arithmetic difference between the maximum organic concentration indicated by the instrument and the background level shall be compared with the value of 500 ppmv. If the difference is less than 500 ppmv, then the potential leak interface is determined to operate with no detectable organic emissions.

(b) Procedure for determining a container to be vapor-tight for the purpose of complying with this subpart.

(1) The test shall be performed in accordance with Method 27 of 40 CFR part 60, appendix A of this chapter.

(2) A pressure measurement device shall be used that has a precision of  $\pm 2.5$  mm water and that is capable of measuring above the pressure at which the container is to be tested for vapor tightness.

(3) If the test results determined by Method 27 indicate that the container sustains a pressure change less than or equal to 750 Pascals within 5 minutes after it is pressurized to a minimum of 4,500 Pascals, then the container is determined to be vapor-tight.

**§ 63.926 Inspection and monitoring requirements.**

(a) Owners and operators of containers using either Container Level 1 or Container Level 2 controls in accordance with the provisions of §§ 63.922 and 63.923 of this subpart, respectively,

shall inspect the container and its cover and closure devices as follows:

(1) In the case when a regulated-material already is in the container at the time the owner or operator first accepts possession of the container at the facility site and the container is not emptied (i.e., does not meet the conditions for an empty container) within 24 hours after the container arrives at the facility site, the container and its cover and closure devices shall be visually inspected by the owner or operator to check for visible cracks, holes, gaps, or other open spaces into the interior of the container when the cover and closure devices are secured in the closed position. If a defect is detected, the owner or operator shall repair the defect in accordance with the requirements of paragraph (a)(3) of this section.

(2) In the case when a container used for managing regulated-material remains at the facility site for a period of 1 year or more, the container and its cover and closure devices shall be visually inspected by the owner or operator initially and thereafter, at least once every 12 months, to check for visible cracks, holes, gaps, or other open spaces into the interior of the container when the cover and closure devices are secured in the closed position. If a defect is detected, the owner or operator shall repair the defect in accordance with the requirements of paragraph (a)(3) of this section.

(3) When a defect is detected for the container, cover, or closure devices, the owner or operator shall make first efforts at repair of the defect no later than 24 hours after detection and repair shall be completed as soon as possible but no later than 5 calendar days after detection. If repair of a defect cannot be completed within 5 calendar days, then the regulated-material shall be removed from the container and the container shall not be used to manage regulated-material until the defect is repaired.

(b) Owners and operators using Container Level 3 controls in accordance with the provisions of § 63.924 of this subpart shall inspect and monitor the

closed-vent systems and control devices in accordance with the requirements of § 63.693 in 40 CFR Part 63, subpart DD—National Emission Standards for Hazardous Air Pollutants from Off-Site Waste and Recovery Operations.

**§ 63.927 Recordkeeping requirements.**

(a) Owners and operators that use Container Level 3 controls in accordance with the provisions of § 63.924 of this subpart shall prepare and maintain the following records:

(1) Records for the most recent set of calculations and measurements performed by the owner or operator to verify that the enclosure meets the criteria of a permanent total enclosure as specified in “Procedure T—Criteria for and Verification of a Permanent or Temporary Total Enclosure” under 40 CFR 52.741, Appendix B.

(2) Records required for the closed-vent system and control device in accordance with the requirements of § 63.693 in 40 CFR Part 63, subpart DD—National Emission Standards for Hazardous Air Pollutants from Off-Site Waste and Recovery Operations.

(b) [Reserved]

**§ 63.928 Reporting requirements.**

(a) For owners and operators that use Container Level 3 controls in accordance with the provisions of § 63.924 of this subpart, the owner or operator shall prepare and submit to the Administrator the reports required for closed-vent systems and control devices in accordance with the requirements of § 63.693 in 40 CFR Part 63, subpart DD—National Emission Standards for Hazardous Air Pollutant Standards from Off-Site Waste and Recovery Operations.

(b) [Reserved]

**Subpart QQ—National Emission Standards for Surface Impoundments**

SOURCE: 61 FR 34190, July 1, 1996, unless otherwise noted.

**§ 63.940 Applicability.**

The provisions of this subpart apply to the control of air emissions from surface impoundments for which an-

other subpart of 40 CFR parts 60, 61, or 63 references the use of this subpart for such air emission control. These air emission standards for surface impoundments are placed here for administrative convenience and only apply to those owners and operators of facilities subject to the other subparts that reference this subpart. The provisions of 40 CFR part 63, subpart AA—General Provisions do not apply to this subpart except as noted in the subpart that references this subpart.

**§ 63.941 Definitions.**

All terms used in this subpart shall have the meaning given to them in the Act and in this section. If a term is defined in both this section and in another subpart that references the use of this subpart, then the definition in this subpart shall take precedence when implementing this subpart.

*Closure device* means a cap, hatch, lid, plug, seal, valve, or other type of fitting that prevents or reduces air emissions to the atmosphere by blocking an opening in a surface impoundment cover when the device is secured in the closed position. Closure devices include devices that are detachable from the cover (e.g., a sampling port cap), manually operated (e.g., a hinged access lid or hatch), or automatically operated (e.g., a spring loaded pressure relief valve).

*Cover* means an air-supported structure, rigid roof, or other device that prevents or reduces air pollutant emissions to the atmosphere by forming a continuous barrier over the material managed in a surface impoundment. A cover may have openings (such as access hatches) that are necessary for operation, inspection, maintenance, and repair of equipment in the surface impoundment on which the cover is used.

*No detectable organic emissions* means no escape of organics to the atmosphere as determined using the procedure specified in § 63.944(a) of this subpart.

*Regulated-material* means the material (e.g. waste, wastewater, off-site material) required to be managed in containers using air emission controls in accordance with the standards specified in this subpart.

*Safety device* means a closure device such as a pressure relief valve, frangible disc, fusible plug, or any other type of device which functions exclusively to prevent physical damage or permanent deformation to the surface impoundment air emission control equipment by venting gases or vapors directly to the atmosphere during unsafe conditions resulting from an unplanned, accidental, or emergency event. For the purpose of this subpart, a safety device is not used for routine venting of gases or vapors from the vapor headspace underneath the surface impoundment cover such as during filling of the surface impoundment or to adjust the pressure in this vapor headspace in response to normal daily diurnal ambient temperature fluctuations. A safety device is designed to remain in a closed position during normal operations and open only when the internal pressure, or another relevant parameter, exceeds the device threshold setting applicable to the air emission control equipment as determined by the owner or operator based on manufacturer recommendations, applicable regulations, fire protection and prevention codes, standard engineering codes and practices, or other requirements for the safe handling of flammable, ignitable, explosive, reactive, or hazardous materials.

*Surface impoundment* means a unit that is a natural topographical depression, man-made excavation, or diked area formed primarily of earthen materials (although it may be lined with man-made materials), which is designed to hold an accumulation of liquids. Examples of surface impoundments include holding, storage, settling, and aeration pits, ponds, and lagoons.

**§ 63.942 Standards—Surface impoundment floating membrane cover.**

(a) This section applies to owners and operators subject to this subpart and controlling air emissions from a surface impoundment using a floating membrane cover.

(b) The surface impoundment shall be equipped with a floating membrane cover designed to meet the following specifications:

(1) The floating membrane cover shall be designed to float on the liquid surface during normal operations, and form a continuous barrier over the entire surface area of the liquid.

(2) The cover shall be fabricated from a synthetic membrane material that is either:

(i) High density polyethylene (HDPE) with a thickness no less than 2.5 millimeters (mm); or

(ii) A material or a composite of different materials determined to have both organic permeability properties that are equivalent to those of the material listed in paragraph (b)(2)(i) of this section; and chemical and physical properties that maintain the material integrity for the intended service life of the material.

(3) The cover shall be installed in a manner such that there are no visible cracks, holes, gaps, or other open spaces between cover section seams or between the interface of the cover edge and its foundation mountings.

(4) Except as provided for in paragraph (b)(5) of this section, each opening in the floating membrane cover shall be equipped with a closure device designed to operate such that when the closure device is secured in the closed position there are no visible cracks, holes, gaps, or other open spaces in the closure device or between the perimeter of the cover opening and the closure device.

(5) The floating membrane cover may be equipped with one or more emergency cover drains for removal of stormwater. Each emergency cover drain shall be equipped with a slotted membrane fabric cover that covers at least 90 percent of the area of the opening or a flexible fabric sleeve seal.

(6) The closure devices shall be made of suitable materials that will minimize exposure of the regulated-material to the atmosphere, to the extent practical, and will maintain the integrity of the equipment throughout its intended service life. Factors to be considered when selecting the materials for and designing the cover and closure devices shall include: organic vapor permeability; the effects of any contact with the liquid and its vapor managed in the surface impoundment; the effects of outdoor exposure to wind,

moisture, and sunlight; and the operating practices used for the surface impoundment on which the floating membrane cover is installed.

(c) Whenever a regulated-material is in the surface impoundment, the floating membrane cover shall float on the liquid and each closure device shall be secured in the closed position except as follows:

(1) Opening of closure devices or removal of the cover is allowed at the following times:

(i) To provide access to the surface impoundment for performing routine inspection, maintenance, or other activities needed for normal operations. Examples of such activities include those times when a worker needs to open a port to sample the liquid in the surface impoundment, or when a worker needs to open a hatch to maintain or repair equipment. Following completion of the activity, the owner or operator shall promptly replace the cover and secure the closure device in the closed position, as applicable.

(ii) To remove accumulated sludge or other residues from the bottom of surface impoundment.

(2) Opening of a spring-loaded pressure-vacuum relief valve, conservation vent, or similar type of pressure relief device which vents to the atmosphere is allowed during normal operations for the purpose of maintaining the pressure in the vapor headspace underneath the cover in accordance with the cover design specifications. The device shall be designed to operate with no detectable organic emissions as defined in §63.941 of this subpart when the device is secured in the closed position. The settings at which the device opens shall be established such that the device remains in the closed position whenever the cover vapor headspace pressure is within the pressure operating range determined by the owner or operator based on the cover manufacturer recommendations, applicable regulations, fire protection and prevention codes, standard engineering codes and practices, or other requirements for the safe handling of flammable, ignitable, explosive, reactive, or hazardous materials.

(3) Opening of a safety device, as defined in §63.941 of this subpart, is al-

lowed at any time conditions require it to do so to avoid an unsafe condition.

(d) The owner or operator shall inspect the floating membrane cover in accordance with the procedures specified in §63.946(a) of this subpart.

**§63.943 Standards—Surface impoundment vented to control device.**

(a) This section applies to owners and operators subject to this subpart and controlling air emissions from a surface impoundment using a cover and venting the vapor headspace underneath the cover through a closed-vent system to a control device.

(b) The surface impoundment shall be covered by a cover and vented directly through a closed-vent system to a control device in accordance with the following requirements:

(1) The cover and its closure devices shall be designed to form a continuous barrier over the entire surface area of the liquid in the surface impoundment.

(2) Each opening in the cover not vented to the control device shall be equipped with a closure device. If the pressure in the vapor headspace underneath the cover is less than atmospheric pressure when the control device is operating, the closure devices shall be designed to operate such that when the closure device is secured in the closed position there are no visible cracks, holes, gaps, or other open spaces in the closure device or between the perimeter of the cover opening and the closure device. If the pressure in the vapor headspace underneath the cover is equal to or greater than atmospheric pressure when the control device is operating, the closure device shall be designed to operate with no detectable organic emissions using the procedure specified in §63.945(a) of this subpart.

(3) The cover and its closure devices shall be made of suitable materials that will minimize exposure of the regulated-material to the atmosphere, to the extent practical, and will maintain the integrity of the equipment throughout its intended service life. Factors to be considered when selecting the materials for and designing the cover and closure devices shall include: organic vapor permeability; the effects

of any contact with the liquid or its vapors managed in the surface impoundment; the effects of outdoor exposure to wind, moisture, and sunlight; and the operating practices used for the surface impoundment on which the cover is installed.

(4) The closed-vent system and control device shall be designed and operated in accordance with the requirements of § 63.693 in 40 CFR part 63, subpart DD—National Emission Standards for Hazardous Air Pollutant Standards from Off-Site Waste and Recovery Operations.

(c) Whenever a regulated-material is in the surface impoundment, the cover shall be installed with each closure device secured in the closed position and the vapor headspace underneath the cover vented to the control device except as follows:

(1) Venting to the control device is not required, and opening of closure devices or removal of the cover is allowed at the following times:

(i) To provide access to the surface impoundment for performing routine inspection, maintenance, or other activities needed for normal operations. Examples of such activities include those times when a worker needs to open a port to sample liquid in the surface impoundment, or when a worker needs to open a hatch to maintain or repair equipment. Following completion of the activity, the owner or operator shall promptly secure the closure device in the closed position or re-install the cover, as applicable, to the surface impoundment.

(ii) To remove accumulated sludge or other residues from the bottom of surface impoundment.

(2) Opening of a safety device, as defined in § 63.941 of this subpart, is allowed at any time conditions require it to do so to avoid an unsafe condition.

(d) The owner or operator shall inspect and monitor the air emission control equipment in accordance with the procedures specified in § 63.946(b) of this subpart.

**§ 63.944 [Reserved]**

**§ 63.945 Test methods and procedures.**

(a) Procedure for determining no detectable organic emissions for the purpose of complying with this subpart.

(1) The test shall be conducted in accordance with the procedures specified in Method 21 of 40 CFR part 60, appendix A. Each potential leak interface (i.e., a location where organic vapor leakage could occur) on the cover and associated closure devices shall be checked. Potential leak interfaces that are associated with covers and closure devices include, but are not limited to: the interface of the cover and its foundation mounting; the periphery of any opening on the cover and its associated closure device; and the sealing seat interface on a spring-loaded pressure-relief valve.

(2) The test shall be performed when the surface impoundment contains a material having an organic HAP concentration representative of the range of concentrations for the regulated-materials expected to be managed in the surface impoundment. During the test, the cover and closure devices shall be secured in the closed position.

(3) The detection instrument shall meet the performance criteria of Method 21 of 40 CFR part 60, appendix A, except the instrument response factor criteria in section 3.1.2(a) of Method 21 shall be for the average composition of the organic constituents in the regulated-material placed in the surface impoundment, not for each individual organic constituent.

(4) The detection instrument shall be calibrated before use on each day of its use by the procedures specified in Method 21 of 40 CFR part 60, appendix A.

(5) Calibration gases shall be as follows:

(i) Zero air (less than 10 ppmv hydrocarbon in air); and

(ii) A mixture of methane in air at a concentration of approximately, but less than 10,000 ppmv.

(6) The background level shall be determined according to the procedures

in Method 21 of 40 CFR part 60, appendix A.

(7) Each potential leak interface shall be checked by traversing the instrument probe around the potential leak interface as close to the interface as possible, as described in Method 21. In the case when the configuration of the cover or closure device prevents a complete traverse of the interface, all accessible portions of the interface shall be sampled. In the case when the configuration of the closure device prevents any sampling at the interface and the device is equipped with an enclosed extension or horn (e.g., some pressure relief devices), the instrument probe inlet shall be placed at approximately the center of the exhaust area to the atmosphere.

(8) The arithmetic difference between the maximum organic concentration indicated by the instrument and the background level shall be compared with the value of 500 ppmv. If the difference is less than 500 ppmv, then the potential leak interface is determined to operate with no detectable organic emissions.

(b) [Reserved]

**§ 63.946 Inspection and monitoring requirements.**

(a) Owners and operators that use a surface impoundment equipped with a floating membrane cover in accordance with the provisions of § 63.942 of this subpart shall meet the following requirements:

(1) The floating membrane cover and its closure devices shall be visually inspected by the owner or operator to check for defects that could result in air emissions. Defects include, but are not limited to, visible cracks, holes, or gaps in the cover section seams or between the interface of the cover edge and its foundation mountings; broken, cracked, or otherwise damaged seals or gaskets on closure devices; and broken or missing hatches, access covers, caps, or other closure devices.

(2) The owner or operator shall perform the inspections following installation of the floating membrane cover and, thereafter, at least once every year.

(3) In the event that a defect is detected, the owner or operator shall re-

pair the defect in accordance with the requirements of paragraph (c) of this section.

(4) The owner or operator shall maintain a record of the inspection in accordance with the requirements specified in § 63.947(a)(2) of this subpart.

(b) Owners and operators that use a surface impoundment equipped with a cover and vented through a closed-vent system to a control device in accordance with the provisions of § 63.943 of this subpart shall inspect the air emission control equipment as follows:

(1) The owner or operator shall visually inspect the cover in accordance with the following requirements:

(i) The cover and its closure devices shall be visually inspected by the owner or operator to check for defects that could result in air emissions. Defects include, but are not limited to, visible cracks, holes, or gaps in the roof sections or between the interface of the roof edge and its foundation mountings; broken, cracked, or otherwise damaged seals or gaskets on closure devices; and broken or missing hatches, access covers, caps, or other closure devices.

(ii) The owner or operator shall perform the inspections following installation of the cover and, thereafter, at least once every year.

(iii) In the event that a defect is detected, the owner or operator shall repair the defect in accordance with the requirements of paragraph (c) of this section.

(iv) The owner or operator shall maintain a record of the inspection in accordance with the requirements specified in § 63.947(a)(2) of this subpart.

(2) The owner or operator shall inspect and monitor the closed-vent system and the control device in accordance with the requirements specified in § 63.693 in 40 CFR part 63 subpart DD—National Emission Standards for Hazardous Air Pollutant Standards for Off-Site Waste and Recovery Operations.

(c) The owner or operator shall repair all detected defects as follows:

(1) The owner or operator shall make first efforts at repair of the defect no later than 5 calendar days after detection and repair shall be completed as soon as possible but no later than 45

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calendar days after detection except as provided in paragraph (c)(2) of this section.

(2) Repair of a defect may be delayed beyond 45 calendar days if the owner or operator determines that repair of the defect requires emptying or temporary removal from service of the surface impoundment and no alternative surface impoundment or tank capacity is available at the site to accept the regulated-material normally managed in the surface impoundment. In this case, the owner or operator shall repair the defect at the next time the process or unit that is generating the regulated-material managed in the surface impoundment stops operation. Repair of the defect shall be completed before the process or unit resumes operation.

(3) The owner or operator shall maintain a record of the defect repair in accordance with the requirements specified in § 63.947 of this subpart.

**§ 63.947 Recordkeeping requirements.**

(a) Each owner or operator shall prepare and maintain the following records:

(1) Documentation describing the floating membrane cover or cover design, as applicable to the surface impoundment.

(2) A record for each inspection required by § 63.946 of this subpart that includes the following information: a surface impoundment identification number (or other unique identification description as selected by the owner or operator) and the date of inspection.

(3) The owner or operator shall record for each defect detected during inspections required by § 63.946 of this subpart the following information: the location of the defect, a description of the defect, the date of detection, and corrective action taken to repair the defect. In the event that repair of the defect is delayed in accordance with the provisions of § 63.946(c)(2) of this section, the owner or operator shall also record the reason for the delay and the date that completion of repair of the defect is expected.

(b) Owners and operators that use a surface impoundment equipped with a fixed-roof and vented through a closed-vent system to a control device in accordance with the provisions of § 63.943

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of this subpart shall prepare and maintain the records required for the closed-vent system and control device in accordance with the requirements of § 63.693 in 40 CFR part 63, subpart DD—National Emission Standards for Hazardous Air Pollutant Standards from Off-Site Waste and Recovery Operations.

**§ 63.948 Reporting requirements.**

Owners and operators that use a surface impoundment equipped with a fixed-roof and vented through a closed-vent system to a control device in accordance with the provisions of § 63.943 of this subpart shall prepare and submit to the Administrator the reports required for closed-vent systems and control devices in accordance with the requirements of § 63.693 in 40 CFR part 63, subpart DD—National Emission Standards for Hazardous Air Pollutant Standards from Off-Site Waste and Recovery Operations.

**Subpart RR—National Emission Standards for Individual Drain Systems**

SOURCE: 61 FR 34193, July 1, 1996, unless otherwise noted.

**§ 63.960 Applicability.**

(a) The provisions of this subpart apply to the control of air emissions from individual drain systems for which another subpart of 40 CFR parts 60, 61, or 63 references the use of this subpart for such air emission control. These air emission standards for individual drain systems are placed here for administrative convenience and only apply to those owners and operators of facilities subject to the other subparts that reference this subpart. The provisions of 40 CFR part 63, subpart A—General Provisions do not apply to this subpart except as noted in the subpart that references this subpart.

(b) [Reserved]

**§ 63.961 Definitions.**

All terms used in this subpart shall have the meaning given to them in the

Act and in this section. If a term is defined in both this section and in another subpart that references the use of this subpart, then the definition in this subpart shall take precedence when implementing this subpart.

*Closure device* means a cap, cover, hatch, lid, plug, seal, valve, or other type of fitting that, when the device is secured in the closed position, prevents or reduces air emissions to the atmosphere by blocking an opening to the individual drain system. Closure devices include devices that are detachable (e.g., a plug or manhole cover), manually operated (e.g., a hinged access lid or hatch), or automatically operated (e.g., a spring-loaded pressure relief valve).

*Hard-piping* means pipe or tubing that is manufactured and properly installed in accordance with relevant standards (e.g., ANSI B31-3) and good engineering practices.

*Individual drain system* means a stationary system used to convey wastewater streams or residuals to a waste management unit or to discharge or disposal. The term includes hard-piping, all drains and junction boxes, together with their associated sewer lines and other junction boxes (e.g., manholes, sumps, and lift stations) conveying wastewater streams or residuals. For the purpose of this subpart, an individual drain system is not a drain and collection system that is designed and operated for the sole purpose of collecting rainfall runoff (e.g., stormwater sewer system) and is segregated from all other individual drain systems.

*Junction box* means a sump, manhole, or access point to a sewer line or a lift station.

*Sewer line* means a lateral, trunk line, branch line, or other conduit used to convey wastewater to a downstream waste management unit. Sewer lines include pipes, grates, and trenches.

*Waste management unit* means the equipment, structure, or device used to convey, store, treat, or dispose of wastewater streams or residuals. Examples of waste management units include: wastewater tanks, surface impoundments, individual drain systems, and biological wastewater treatment units. Examples of equipment that may

be waste management units include containers, air flotation units, oil-water separators or organic-water separators, or organic removal devices such as decanters, strippers, or thin-film evaporation units.

*Water seal* means a seal pot, p-leg trap, or other type of trap filled with water (e.g., flooded sewers that maintain liquid levels adequate to prevent air flow through the system) that creates a liquid barrier between the sewer line and the atmosphere. The liquid level of the seal must be maintained in the vertical leg of a drain in order to be considered a water seal.

#### § 63.962 Standards.

(a) The owner or operator subject to this subpart shall control air emissions from the individual drain system using one or a combination of the following:

(1) Covers, water seals, and other air emission control equipment as specified in paragraph (b) of this section.

(2) Hard-piping.

(3) Venting of the individual drain system through a closed vent system to a control device in accordance with the following requirements:

(i) The individual drain system is designed and operated such that an internal pressure in the vapor headspace in the system is maintained at a level less than atmospheric pressure when the control device is operating, and

(ii) The closed vent system and control device are designed and operated in accordance with the requirements of § 63.693 in 40 CFR part 63, subpart DD—National Emission Standards for Hazardous Air Pollutant Standards from Off-Site Waste and Recovery Operations.

(b) Owners and operators controlling air emissions from an individual drain system in accordance with paragraph (a)(1) of this section shall meet the following requirements:

(1) The individual drain system shall be designed to segregate the organic vapors from wastewater managed in the controlled individual drain system from entering any other individual drain system that is not controlled for air emissions in accordance with the standards specified in this subpart.

(2) *Drain control requirements.* Each drain shall be equipped with either a

water seal or a closure device in accordance with the following requirements:

(i) When a water seal is used, the water seal shall be designed such that either:

(A) The outlet to the pipe discharging the wastewater extends below the liquid surface in the water seal of the drain; or

(B) A flexible shield or other device is installed which restricts wind motion across the open space between the outlet of the pipe discharging the wastewater and the drain.

(ii) When a closure device is used (e.g., securing a cap or plug on a drain that is not receiving wastewater), the closure device shall be designed to operate such that when the closure device is secured in the closed position there are no visible cracks, holes, gaps, or other open spaces in the closure device or between the perimeter of the drain opening and the closure device.

(3) *Junction box control requirements.* Each junction box shall be equipped with controls as follows:

(i) The junction box shall be equipped with a closure device (e.g., manhole cover, access hatch) that is designed to operate such that when the closure device is secured in the closed position there are no visible cracks, holes, gaps, or other open spaces in the closure device or between the perimeter of the junction box opening and the closure device.

(ii) If the junction box is vented, the junction box shall be vented in accordance with the following requirements:

(A) The junction box shall be vented through a closed vent system to a control device except as provided for in paragraph (b)(3)(ii)(B) of this section. The closed vent system and control device shall be designed and operated in accordance with the standards specified in §63.693 in 40 CFR part 63, subpart DD—National Emission Standards for Hazardous Air Pollutant Standards for Off-Site Waste and Recovery Operations.

(B) As an alternative to paragraph (b)(3)(ii)(A) of this section, the owner or operator may vent the junction box directly to the atmosphere when all of the following conditions are met:

(1) The junction box is filled and emptied by gravity flow (i.e., there is no pump) or is operated with no more than slight fluctuations in the liquid level. Large changes in the size of the junction box vapor headspace created by using a pump to repeatedly empty and then refill the junction box do not meet this condition.

(2) The vent pipe installed on the junction box shall be at least 90 centimeters in length and no greater than 10.2 centimeter in diameter.

(3) Water seals are installed at the liquid entrance(s) to or exit from the junction box to restrict ventilation in the individual drain system and between components in the individual drain system. The owner or operator shall demonstrate (e.g., by visual inspection or smoke test) upon request by the Administrator that the junction box water seal is properly designed and restricts ventilation.

(4) *Sewer line control requirements.* Each sewer line shall not be open to the atmosphere and shall be covered or closed in a manner such that there are no visible cracks, holes, gaps, or other open spaces in the sewer line joints, seals, or other emission interfaces.

(5) *Operating requirements.* The owner or operator shall operate the air emission controls required by paragraphs (b)(2) through (b)(4) of this section in accordance with the following requirements:

(i) Each closure device shall be maintained in a closed position whenever wastewater is in the individual drain system except when it is necessary to remove or open the closure device for sampling or removing material in the individual drain system, or for equipment inspection, maintenance, or repair.

(ii) Each drain equipped with a water seal and open to the atmosphere shall be operated to ensure that the liquid in the water seal is maintained at the appropriate level. Examples of acceptable means for complying with this provision include but are not limited to using a flow-monitoring device indicating positive flow from a main to a branch water line supplying a trap; continuously dripping water into the trap using a hose; or regular visual observations.

(iii) Each closed-vent system and the control device used to comply with paragraph (b)(3)(ii)(A) of this section shall be operated in accordance with the standards specified in 40 CFR 63.693.

**§ 63.963 [Reserved]**

**§ 63.964 Inspection and monitoring requirements.**

(a) The owner or operator shall inspect the individual drain system in accordance with the following requirements:

(1) The individual drain system shall be visually inspected by the owner or operator as follows to check for defects that could result in air emissions to the atmosphere.

(i) The owner or operator shall visually inspect each drain as follows:

(A) In the case when the drain is using a water seal to control air emissions, the owner or operator shall verify appropriate liquid levels are being maintained and identify any other defects that could reduce water seal control effectiveness.

(B) In the case when the drain is using a closure device to control air emissions, the owner or operator shall visually inspect each drain to verify that the closure device is in place and there are no defects. Defects include, but are not limited to, visible cracks, holes, or gaps in the closure devices; broken, cracked, or otherwise damaged seals or gaskets on closure devices; and broken or missing plugs, caps, or other closure devices.

(ii) The owner or operator shall visually inspect each junction box to verify that closure devices are in place and there are no defects. Defects include, but are not limited to, visible cracks, holes, or gaps in the closure devices; broken, cracked, or otherwise damaged seals or gaskets on closure devices; and broken or missing hatches, access covers, caps, or other closure devices.

(iii) The owner or operator shall visually inspect the unburied portion of each sewer line to verify that all closure devices are in place and there are no defects. Defects include, but are not limited to, visible cracks, holes, gaps, or other open spaces in the sewer line

joints, seals, or other emission interfaces.

(iv) The owner or operator shall perform the inspections initially at the time of installation of the water seals and closure devices for the individual drain system and, thereafter, at least once every year.

(v) In the event that a defect is detected, the owner or operator shall repair the defect in accordance with the requirements of paragraph (b) of this section.

(vi) The owner or operator shall maintain a record of the inspection in accordance with the requirements specified in § 63.965(a) of this subpart.

(2) The owner or operator shall inspect and monitor the closed-vent system and the control device in accordance with the requirements specified in § 63.693 in 40 CFR 63 subpart DD—National Emission Standards for Hazardous Air Pollutants from Off-Site Waste and Recovery Operations.

(b) The owner or operator shall repair all detected defects as follows:

(1) The owner or operator shall make first efforts at repair of the defect no later than 5 calendar days after detection and repair shall be completed as soon as possible but no later than 15 calendar days after detection except as provided in paragraph (b)(2) of this section.

(2) Repair of a defect may be delayed beyond 15 calendar days if the owner or operator determines that repair of the defect requires emptying or temporary removal from service of the individual drain system and no alternative capacity is available at the facility site to accept the wastewater normally managed in the individual drain system. In this case, the owner or operator shall repair the defect at the next time the process or unit that is generating the wastewater managed in the individual drain system stops operation. Repair of the defect shall be completed before the process or unit resumes operation.

(3) The owner or operator shall maintain a record of the defect repair in accordance with the requirements specified in § 63.965(a)(3) of this subpart.

**§ 63.965 Recordkeeping requirements.**

(a) Each owner or operator complying with § 63.962(a)(1) of this subpart

shall prepare and maintain the following records:

(1) A written site-specific individual drain system inspection plan that includes a drawing or schematic of the individual drain system and identifies each drain, junction box, and sewer line location.

(2) A record of the date that each inspection required by § 63.964(a) of this subpart is performed.

(3) When applicable, a record for each defect detected during inspections required by § 63.964(a) of this subpart that includes the following information: the location of the defect, a description of the defect, the date of detection, the corrective action taken to repair the defect, and the date that the corrective action was completed. In the event that repair of the defect is delayed in accordance with the provisions of § 63.964(b)(2) of this section, the owner or operator shall also record the reason for the delay and the date that completion of repair of the defect is expected.

(b) Owners and operators that use a closed-vent system and a control device in accordance with the provisions of § 63.962(a)(3) or § 63.692(b)(3)(ii)(A) of this subpart shall prepare and maintain the records required for the closed-vent system and control device in accordance with the requirements of § 63.693 in 40 CFR part 63, subpart DD—National Emission Standards for Hazardous Air Pollutants from Off-Site Waste and Recovery Operations.

#### § 63.966 Reporting requirements.

Owners and operators that use a closed-vent system and a control device in accordance with the provisions of § 63.962(a)(3) or § 63.962(b)(3)(ii)(A) of this subpart shall prepare and submit to the Administrator the reports required for closed-vent systems and control devices in accordance with the requirements of § 63.693 in 40 CFR part 63, subpart DD—National Emission Standards for Hazardous Air Pollutants from Off-Site Waste and Recovery Operations.

### Subparts SS–UU [Reserved]

## Subpart VV—National Emission Standards for Oil-Water Separators and Organic-Water Separators

#### § 63.1040 Applicability.

The provisions of this subpart apply to the control of air emissions from oil-water separators and organic-water separators for which another subpart of 40 CFR parts 60, 61, or 63 references the use of this subpart for such air emission control. These air emission standards for oil-water separators and organic-water separators are placed here for administrative convenience and only apply to those owners and operators of facilities subject to the other subparts that reference this subpart. The provisions of 40 CFR part 63, subpart A—General Provisions do not apply to this subpart except as noted in the subpart that references this subpart.

#### § 63.1041 Definitions.

All terms used in this subpart shall have the meaning given to them in the Act and in this section. If a term is defined in both this section and in another subpart that references the use of this subpart, then the definition in this subpart shall take precedence when implementing this subpart.

*Closure device* means a cap, hatch, lid, plug, seal, valve, or other type of fitting that, when the device is secured in the closed position, prevents or reduces air emissions to the atmosphere by blocking an opening in a fixed roof or floating roof. Closure devices include devices that are detachable from the cover (e.g., a sampling port cap), manually operated (e.g., a hinged access lid or hatch), or automatically operated (e.g., a spring-loaded pressure relief valve).

*Continuous seal* means a seal that forms a continuous closure that completely covers the space between the edge of the floating roof and the wall of a separator. A continuous seal may be

constructed of fastened segments so as to form a continuous seal.

*Fixed roof* means a cover that is mounted on a separator in a stationary position and does not move with fluctuations in the level of the liquid managed in the separator.

*Floating roof* means a pontoon-type or double-deck type cover that rests upon and is supported by the liquid managed in a separator.

*Liquid-mounted seal* means a foam- or liquid-filled continuous seal that is mounted between the wall of the separator and the floating roof, and the seal is in contact with the liquid in a separator.

*Oil-water separator* means a separator as defined for this subpart that is used to separate oil from water.

*Organic-water separator* means a separator as defined for this subpart that is used to separate organics from water.

*Metallic shoe seal* means a continuous seal that is constructed of metal sheets which are held vertically against the wall of the separator by springs, weighted levers, or other mechanisms and is connected to the floating roof by braces or other means. A flexible coated fabric (envelope) spans the annular space between the metal sheet and the floating roof.

*No detectable organic emissions* means no escape of organics to the atmosphere as determined using the procedure specified in §63.1046(a) of this subpart.

*Regulated-material* means the material (e.g. waste, wastewater, off-site material) required to be managed in separators using air emission controls in accordance with the standards specified in this subpart.

*Safety device* means a closure device such as a pressure relief valve, frangible disc, fusible plug, or any other type of device which functions exclusively to prevent physical damage or permanent deformation to the separator air emission control equipment by venting gases or vapors directly to the atmosphere during unsafe conditions resulting from an unplanned, accidental, or emergency event. For the purpose of this subpart, a safety device is not used for routine venting of gases or vapors from the vapor headspace underneath the separator cover. A safety

device is designed to remain in a closed position during normal operations and open only when the internal pressure, or another relevant parameter, exceeds the device threshold setting applicable to the air emission control equipment as determined by the owner or operator based on manufacturer recommendations, applicable regulations, fire protection and prevention codes, standard engineering codes and practices, or other requirements for the safe handling of flammable, ignitable, explosive, reactive, or hazardous materials.

*Separator* means a waste management unit, generally a tank, that is used to separate oil or organics from water. A separator consists of not only the separation unit but also the forebay and other separator basins, skimmers, weirs, grit chambers, sludge hoppers, and bar screens that are located directly after the individual drain system and prior to any additional treatment units such as an air flotation unit clarifier or biological treatment unit. Examples of a separator include an API separator, parallel-plate interceptor, and corrugated-plate interceptor with the associated ancillary equipment.

#### **§63.1042 Standards—Separator fixed roof.**

(a) This section applies to owners and operators subject to this subpart and controlling air emissions from an oil-water separator or organic-water separator using a fixed roof.

(b) The separator shall be equipped with a fixed roof designed to meet the following specifications:

(1) The fixed roof and its closure devices shall be designed to form a continuous barrier over the entire surface area of the liquid in the separator.

(2) The fixed roof shall be installed in a manner such that there are no visible cracks, holes, gaps, or other open spaces between roof section joints or between the interface of the roof edge and the separator wall.

(3) Each opening in the fixed roof shall be equipped with a closure device designed to operate such that when the closure device is secured in the closed position there are no visible cracks, holes, gaps, or other open spaces in the

closure device or between the perimeter of the opening and the closure device.

(4) The fixed roof and its closure devices shall be made of suitable materials that will minimize exposure of the regulated-material to the atmosphere, to the extent practical, and will maintain the integrity of the equipment throughout its intended service life. Factors to be considered when selecting the materials for and designing the fixed roof and closure devices shall include: organic vapor permeability; the effects of any contact with the liquid and its vapors managed in the separator; the effects of outdoor exposure to wind, moisture, and sunlight; and the operating practices used for the separator on which the fixed roof is installed.

(c) Whenever a regulated-material is in the separator, the fixed roof shall be installed with each closure device secured in the closed position except as follows:

(1) Opening of closure devices or removal of the fixed roof is allowed at the following times:

(i) To provide access to the separator for performing routine inspection, maintenance, or other activities needed for normal operations. Examples of such activities include those times when a worker needs to open a port to sample the liquid in the separator, or when a worker needs to open a hatch to maintain or repair equipment. Following completion of the activity, the owner or operator shall promptly secure the closure device in the closed position or reinstall the cover, as applicable, to the separator.

(ii) To remove accumulated sludge or other residues from the bottom of separator.

(2) Opening of a spring-loaded pressure-vacuum relief valve, conservation vent, or similar type of pressure relief device which vents to the atmosphere is allowed during normal operations for the purpose of maintaining the pressure in vapor headspace underneath the fixed roof in accordance with the separator design specifications. The device shall be designed to operate with no detectable organic emissions, as determined using the procedure specified in § 63.1046(a) of this subpart, when the de-

vice is secured in the closed position. The settings at which the device opens shall be established such that the device remains in the closed position whenever the pressure in the vapor headspace underneath the fixed roof is within the pressure operating range determined by the owner or operator based on the cover manufacturer recommendations, applicable regulations, fire protection and prevention codes, standard engineering codes and practices, or other requirements for the safe handling of flammable, ignitable, explosive, reactive, or hazardous materials.

(3) Opening of a safety device, as defined in § 63.1041 of this subpart, is allowed at any time conditions require it to do so to avoid an unsafe condition.

(d) The owner or operator shall inspect the fixed roof and any closure devices in accordance with the requirements specified in § 63.1047(a) of this subpart.

**§ 63.1043 Standards—Separator floating roof.**

(a) This section applies to owners and operators subject to this subpart and controlling air emissions from an oil-water separator or organic-water separator using a floating roof.

(b) The separator shall be equipped with a floating roof designed to meet the following specifications:

(1) The floating roof shall be designed to float on the liquid surface during normal operations.

(2) The floating roof shall be equipped with two continuous seals, one above the other, between the wall of the separator and the roof edge. The lower seal is referred to as the primary seal, and the upper seal is referred to as the secondary seal.

(i) The primary seal shall be a liquid-mounted seal or a metallic shoe seal, as defined in § 63.1041 of this subpart. The total area of the gaps between the separator wall and the primary seal shall not exceed 67 square centimeters (cm<sup>2</sup>) per meter of separator wall perimeter, and the width of any portion of these gaps shall not exceed 3.8 centimeters (cm).

(ii) The secondary seal shall be mounted above the primary seal and cover the annular space between the

floating roof and the wall of the separator. The total area of the gaps between the separator wall and the secondary seal shall not exceed 6.7 square centimeters (cm<sup>2</sup>) per meter of separator wall perimeter, and the width of any portion of these gaps shall not exceed 1.3 centimeters (cm).

(3) Except as provided for in paragraph (b)(4) of this section, each opening in the floating roof shall be equipped with a closure device designed to operate such that when the closure device is secured in the closed position there are no visible cracks, holes, gaps, or other open spaces in the closure device or between the perimeter of the cover opening and the closure device.

(4) The floating roof may be equipped with one or more emergency roof drains for removal of stormwater. Each emergency roof drain shall be equipped with a slotted membrane fabric cover that covers at least 90 percent of the area of the opening or a flexible fabric sleeve seal.

(c) Whenever a regulated-material is in the separator, the floating roof shall float on the liquid (i.e., off the roof supports) and each closure device shall be secured in the closed position except as follows:

(1) Opening of closure devices is allowed at the following times:

(i) To provide access to the separator for performing routine inspection, maintenance, or other activities needed for normal operations. Examples of such activities include those times when a worker needs to open a port to sample the liquid in the separator, or when a worker needs to open a hatch to maintain or repair equipment. Following completion of the activity, the owner or operator shall promptly secure the closure device in the closed position.

(ii) To remove accumulated sludge or other residues from the bottom of separator.

(2) Opening of a safety device, as defined in § 63.1041 of this subpart, is allowed at any time conditions require it to do so to avoid an unsafe condition.

(d) The owner or operator shall inspect the floating roof in accordance with the procedures specified in § 63.1047(b) of this subpart.

**§ 63.1044 Standards—Separator vented to control device.**

(a) This section applies to owners and operators controlling air emissions from an oil-water or organic-water separator using a fixed roof and venting the vapor headspace underneath the fixed roof through a closed-vent system to a control device.

(b) The separator shall be covered by a fixed roof and vented directly through a closed-vent system to a control device in accordance with the following requirements:

(1) The fixed roof and its closure devices shall be designed to form a continuous barrier over the entire surface area of the liquid in the separator.

(2) Each opening in the fixed roof not vented to the control device shall be equipped with a closure device. If the pressure in the vapor headspace underneath the fixed roof is less than atmospheric pressure when the control device is operating, the closure devices shall be designed to operate such that when the closure device is secured in the closed position there are no visible cracks, holes, gaps, or other open spaces in the closure device or between the perimeter of the cover opening and the closure device. If the pressure in the vapor headspace underneath the fixed roof is equal to or greater than atmospheric pressure when the control device is operating, the closure device shall be designed to operate with no detectable organic emissions, as determined using the procedure specified in § 63.1046(a) of this subpart.

(3) The fixed roof and its closure devices shall be made of suitable materials that will minimize exposure of the regulated-material to the atmosphere, to the extent practical, and will maintain the integrity of the equipment throughout its intended service life. Factors to be considered when selecting the materials for and designing the fixed roof and closure devices shall include: organic vapor permeability; the effects of any contact with the liquid or its vapors managed in the separator; the effects of outdoor exposure to wind, moisture, and sunlight; and the operating practices used for the separator on which the fixed roof is installed.

(4) The closed-vent system and control device shall be designed and operated in accordance with the requirements of § 63.693 in 40 CFR part 63, subpart DD—National Emission Standards for Hazardous Air Pollutants from Off-Site Waste and Recovery Operations.

(c) Whenever a regulated-material is in the separator, the fixed roof shall be installed with each closure device secured in the closed position and the vapor headspace underneath the fixed roof vented to the control device except as follows:

(1) Venting to the control device is not required, and opening of closure devices or removal of the fixed roof is allowed at the following times:

(i) To provide access to the separator for performing routine inspection, maintenance, or other activities needed for normal operations. Examples of such activities include those times when a worker needs to open a port to sample liquid in the separator, or when a worker needs to open a hatch to maintain or repair equipment. Following completion of the activity, the owner or operator shall promptly secure the closure device in the closed position or reinstall the cover, as applicable, to the separator.

(ii) To remove accumulated sludge or other residues from the bottom of separator.

(2) Opening of a safety device, as defined in § 63.1041 of this subpart, is allowed at any time conditions require it to do so to avoid an unsafe condition.

(d) The owner or operator shall inspect and monitor the air emission control equipment in accordance with the procedures specified in § 63.1047(c) of this subpart.

#### § 63.1045 [Reserved]

#### § 63.1046 Test methods and procedures.

(a) Procedure for determining no detectable organic emissions for the purpose of complying with this subpart.

(1) The test shall be conducted in accordance with the procedures specified in Method 21 of 40 CFR part 60, appendix A. Each potential leak interface (i.e., a location where organic vapor leakage could occur) on the cover and associated closure devices shall be

checked. Potential leak interfaces that are associated with covers and closure devices include, but are not limited to: the interface of the cover and its foundation mounting; the periphery of any opening on the cover and its associated closure device; and the sealing seat interface on a spring-loaded pressure-relief valve.

(2) The test shall be performed when the separator contains a material having an organic HAP concentration representative of the range of concentrations for the regulated-materials expected to be managed in the separator. During the test, the cover and closure devices shall be secured in the closed position.

(3) The detection instrument shall meet the performance criteria of Method 21 of 40 CFR part 60, appendix A, except the instrument response factor criteria in section 3.1.2(a) of Method 21 shall be for the average composition of the organic constituents in the regulated-material placed in the separator, not for each individual organic constituent.

(4) The detection instrument shall be calibrated before use on each day of its use by the procedures specified in Method 21 of 40 CFR part 60, appendix A.

(5) Calibration gases shall be as follows:

(i) Zero air (less than 10 ppmv hydrocarbon in air); and

(ii) A mixture of methane in air at a concentration of approximately, but less than, 10,000 ppmv.

(6) The background level shall be determined according to the procedures in Method 21 of 40 CFR part 60 appendix A.

(7) Each potential leak interface shall be checked by traversing the instrument probe around the potential leak interface as close to the interface as possible, as described in Method 21. In the case when the configuration of the cover or closure device prevents a complete traverse of the interface, all accessible portions of the interface shall be sampled. In the case when the configuration of the closure device prevents any sampling at the interface and the device is equipped with an enclosed extension or horn (e.g., some pressure relief devices), the instrument

probe inlet shall be placed at approximately the center of the exhaust area to the atmosphere.

(8) The arithmetic difference between the maximum organic concentration indicated by the instrument and the background level shall be compared with the value of 500 ppmv. If the difference is less than 500 ppmv, then the potential leak interface is determined to operate with no detectable organic emissions.

(b) Procedure for performing floating roof seal gap measurements for the purpose of complying with this subpart.

(1) The owner or operator shall determine the total surface area of gaps in the primary seal and in the secondary seal individually.

(2) The seal gap measurements shall be performed at one or more floating roof levels when the roof is floating off the roof supports.

(3) Seal gaps, if any, shall be measured around the entire perimeter of the floating roof in each place where a 0.32-centimeter (cm) diameter uniform probe passes freely (without forcing or binding against the seal) between the seal and the wall of the separator and measure the circumferential distance of each such location.

(4) For a seal gap measured under paragraph (b)(2) of this section, the gap surface area shall be determined by using probes of various widths to measure accurately the actual distance from the separator wall to the seal and multiplying each such width by its respective circumferential distance.

(5) The total gap area shall be calculated by adding the gap surface areas determined for each identified gap location for the primary seal and the secondary seal individually, and then dividing the sum for each seal type by the nominal perimeter of the separator basin. These total gap areas for the primary seal and secondary seal then are compared to the respective standards for the seal type as specified in § 63.1043(b)(2) of this subpart.

**§ 63.1047 Inspection and monitoring requirements.**

(a) Owners and operators that use a separator equipped with a fixed roof in accordance with the provisions of

§ 63.1042 of this subpart shall meet the following requirements:

(1) The fixed roof and its closure devices shall be visually inspected by the owner or operator to check for defects that could result in air emissions to the atmosphere. Defects include, but are not limited to, visible cracks, holes, or gaps in the roof sections or between the roof and the separator wall; broken, cracked, or otherwise damaged seals or gaskets on closure devices; and broken or missing hatches, access covers, caps, or other closure devices.

(2) The owner or operator shall perform the inspections following installation of the fixed roof and, thereafter, at least once every year.

(3) In the event that a defect is detected, the owner or operator shall repair the defect in accordance with the requirements of paragraph (d) of this section.

(4) The owner or operator shall maintain a record of the inspection in accordance with the requirements specified in § 63.1048(a)(2) of this subpart.

(b) Owners and operators that use a separator equipped with a floating roof in accordance with the provisions of § 63.1043 of this subpart shall meet the following requirements:

(1) The owner or operator shall measure the floating roof seal gaps using the procedure specified in § 63.1046(b) of this subpart in accordance with the following requirements:

(i) The owner or operator shall perform measurements of gaps between the separator wall and the primary seal within 60 days after initial operation of the separator following installation of the floating roof and, thereafter, at least once every 5 years.

(ii) The owner or operator shall perform measurements of gaps between the separator wall and the secondary seal within 60 days after initial operation of the separator following installation of the floating roof and, thereafter, at least once every year.

(iii) If a separator ceases to hold regulated-material for a period of 1 year or more, subsequent introduction of regulated-material into the separator shall be considered an initial operation

for the purpose of complying with paragraphs (b)(1)(i) and (b)(1)(ii) of this section.

(iv) In the event that the seal gap measurements do not conform to the specifications in §63.1043(b)(2) of this subpart, the owner or operator shall repair the defect in accordance with the requirements of paragraph (d) of this section.

(v) The owner or operator shall maintain a record of the inspection in accordance with the requirements specified in §63.1048 (a)(2) and (b) of this subpart.

(2) The owner or operator shall visually inspect the floating roof in accordance with the following requirements:

(i) The floating roof and its closure devices shall be visually inspected by the owner or operator to check for defects that could result in air emissions to the atmosphere. Defects include, but are not limited to: holes, tears, or other openings in the rim seal or seal fabric of the floating roof; a rim seal detached from the floating roof; all or a portion of the floating roof deck being submerged below the surface of the liquid in the separator; broken, cracked, or otherwise damaged seals or gaskets on closure devices; and broken or missing hatches, access covers, caps, or other closure devices.

(ii) The owner or operator shall perform the inspections following installation of the floating roof and, thereafter, at least once every year.

(iii) In the event that a defect is detected, the owner or operator shall repair the defect in accordance with the requirements of paragraph (d) of this section.

(iv) The owner or operator shall maintain a record of the inspection in accordance with the requirements specified in §63.1048(a)(2) of this subpart.

(c) Owners and operators that use a separator equipped with a fixed roof and vented through a closed-vent system to a control device in accordance with the provisions of §63.1044 of this subpart shall inspect the air emission control equipment as follows:

(1) The owner or operator shall visually inspect the fixed roof in accordance with the following requirements:

(i) The fixed roof and its closure devices shall be visually inspected by the owner or operator to check for defects that could result in air emissions. Defects include, but are not limited to, visible cracks, holes, or gaps in the roof sections or between the roof and the separator wall; broken, cracked, or otherwise damaged seals or gaskets on closure devices; and broken or missing hatches, access covers, caps, or other closure devices.

(ii) The owner or operator shall perform the inspections following installation of the fixed roof and, thereafter, at least once every year.

(iii) In the event that a defect is detected, the owner or operator shall repair the defect in accordance with the requirements of paragraph (d) of this section.

(iv) The owner or operator shall maintain a record of the inspection in accordance with the requirements specified in §63.1048(a)(2) of this subpart.

(2) The owner or operator shall inspect and monitor the closed-vent system and the control device in accordance with the requirements specified in §63.693 in 40 CFR 63 subpart DD—National Emission Standards for Hazardous Air Pollutants from Off-Site Waste and Recovery Operations.

(d) The owner or operator shall repair all detected defects as follows:

(1) The owner or operator shall make first efforts at repair of the defect no later than 5 calendar days after detection and repair shall be completed as soon as possible but no later than 45 calendar days after detection except as provided in paragraph (d)(2) of this section.

(2) Repair of a defect may be delayed beyond 45 calendar days if the owner or operator determines that repair of the defect requires emptying or temporary removal from service of the separator and no alternative treatment capacity is available at the facility site to accept the regulated-material normally treated in the separator. In this case, the owner or operator shall repair the defect at the next time the process or unit that is generating the regulated-material managed in the separator stops operation. Repair of the defect shall be completed before the process or unit resumes operation.

(3) The owner or operator shall maintain a record of the defect repair in accordance with the requirements specified in §63.1048(a)(3) of this subpart.

**§63.1048 Recordkeeping requirements.**

(a) Each owner or operator shall prepare and maintain the following records:

(1) Documentation describing the design of each floating roof and fixed roof installed on a separator, as applicable to the separator. When a floating roof is used, the documentation shall include the dimensions of the separator bay or section in which the floating roof is installed.

(2) A record for each inspection required by §63.1047 of this subpart that includes the following information: a separator identification number (or other unique identification description as selected by the owner or operator) and the date of inspection.

(3) The owner or operator shall record for each defect detected during inspections required by §63.1047 of this subpart the following information: the location of the defect, a description of the defect, the date of detection, and corrective action taken to repair the defect. In the event that repair of the defect is delayed in accordance with the provisions of §63.1047(d)(2) of this section, the owner or operator shall also record the reason for the delay and the date that completion of repair of the defect is expected.

(b) Owners and operators that use a separator equipped with a floating roof in accordance with the provisions of §63.1043 of this subpart shall prepare and maintain records for each inspection required by §63.1047(b)(1) describing the results of the seal gap measurements. The records shall include the date of the measurements performed, the raw data obtained for the measurements, and the calculations of the total gap surface area. In the event that the seal gap measurements do not conform to the specifications in §63.1043(b)(2) of this subpart, the records shall include a description of the repairs that were made, the date the repairs were made, and the date the separator was emptied, if necessary.

(c) Owners and operators that use a separator equipped with a fixed-roof

and vented through a closed-vent system to a control device in accordance with the provisions of §63.1044 of this subpart shall prepare and maintain the records required for the closed-vent system and control device in accordance with the requirements of §63.693 in 40 CFR 63 subpart DD—National Emission Standards for Hazardous Air Pollutants from Off-Site Waste and Recovery Operations.

**§63.1049 Reporting requirements.**

(a) Owners and operators that use a separator equipped with a floating roof in accordance with the provisions of §63.1043 of this subpart shall notify the Administrator at least 30 calendar days prior to each seal gap measurement inspection performed to comply with the requirements in §63.1047(b)(1) of this subpart.

(b) Owners and operators that use a separator equipped with a fixed-roof and vented through a closed-vent system to a control device in accordance with the provisions of §63.1044 of this subpart shall prepare and submit to the Administrator the reports required for closed-vent systems and control devices in accordance with the requirements of §63.693 in 40 CFR 63 subpart DD—National Emission Standards for Hazardous Air Pollutants from Off-Site Waste and Recovery Operations.

APPENDIX A TO PART 63—TEST METHODS

METHOD 301—FIELD VALIDATION OF POLLUTANT MEASUREMENT METHODS FROM VARIOUS WASTE MEDIA

1. Applicability and principle

1.1 *Applicability.* This method, as specified in the applicable subpart, is to be used whenever a source owner or operator (hereafter referred to as an “analyst”) proposes a test method to meet a U.S. Environmental Protection Agency (EPA) requirement in the absence of a validated method. This Method includes procedures for determining and documenting the quality, i.e., systematic error (bias) and random error (precision), of the measured concentrations from an effected source. This method is applicable to various waste media (i.e., exhaust gas, wastewater, sludge, etc.).

1.1.1 If EPA currently recognizes an appropriate test method or considers the analyst’s test method to be satisfactory for a particular source, the Administrator may

waive the use of this protocol or may specify a less rigorous validation procedure. A list of validated methods may be obtained by contacting the Emission Measurement Technical Information Center (EMTIC), Mail Drop 19, U.S. Environmental Protection Agency, Research Triangle Park, NC 27711, (919) 541-0200. Procedures for obtaining a waiver are in Section 12.0.

1.1.2 This method includes optional procedures that may be used to expand the applicability of the proposed method. Section 7.0 involves ruggedness testing (Laboratory Evaluation), which demonstrates the sensitivity of the method to various parameters. Section 8.0 involves a procedure for including sample stability in bias and precision for assessing sample recovery and analysis times; Section 9.0 involves a procedure for the determination of the practical limit of quantitation for determining the lower limit of the method. These optional procedures are required for the waiver consideration outlined in Section 12.0.

1.2 *Principle.* The purpose of these procedures is to determine bias and precision of a test method at the level of the applicable standard. The procedures involve (a) introducing known concentrations of an analyte or comparing the test method against a validated test method to determine the method's bias and (b) collecting multiple or collocated simultaneous samples to determine the method's precision.

1.2.1 *Bias.* Bias is established by comparing the method's results against a reference value and may be eliminated by employing a correction factor established from the data obtained during the validation test. An offset bias may be handled accordingly. Methods that have bias correction factors outside 0.7 to 1.3 are unacceptable. Validated method to proposed method comparisons, section 6.2, requires a more restrictive test of central tendency and a lower correction factor allowance of 0.90 to 1.10.

1.2.2 *Precision.* At the minimum, paired sampling systems shall be used to establish precision. The precision of the method at the level of the standard shall not be greater than 50 percent relative standard deviation. For a validated method to proposed method equivalency comparisons, section 6.2, the analyst must demonstrate that the precision of the proposed test method is as precise as the validated method for acceptance.

## 2. Definitions

2.1 *Negative bias.* Bias resulting when the measured result is less than the "true" value.

2.2 *Paired sampling system.* A sampling system capable of obtaining two replicate samples that were collected as closely as possible in sampling time and sampling location.

2.3 *Positive bias.* Bias resulting when the measured result is greater than the "true" value.

2.4 *Proposed method.* The sampling and analytical methodology selected for field validation using the method described herein.

2.5 *Quadruplet sampling system.* A sampling system capable of obtaining four replicate samples that were collected as closely as possible in sampling time and sampling location.

2.6 *Surrogate compound.* A compound that serves as a model for the types of compounds being analyzed (i.e., similar chemical structure, properties, behavior). The model can be distinguished by the method from the compounds being analyzed.

## 3. Reference Material

The reference materials shall be obtained or prepared at the level of the standard. Additional runs with higher and lower reference material concentrations may be made to expand the applicable range of the method, in accordance with the ruggedness test procedures.

3.1 *Exhaust Gas Tests.* The analyst shall obtain a known concentration of the reference material (i.e., analyte of concern) from an independent source such as a specialty gas manufacturer, specialty chemical company, or commercial laboratory. A list of vendors may be obtained from EMTIC (see Section 1.1.1). The analyst should obtain the manufacturer's stability data of the analyte concentration and recommendations for recertification.

3.2 *Other Waste Media Tests.* The analyst shall obtain pure liquid components of the reference materials (i.e., analytes of concern) from an independent manufacturer and dilute them in the same type matrix as the source waste. The pure reference materials shall be certified by the manufacturer as to purity and shelf life. The accuracy of all diluted reference material concentrations shall be verified by comparing their response to independently-prepared materials (independently prepared in this case means prepared from pure components by a different analyst).

3.3 *Surrogate Reference Materials.* The analyst may use surrogate compounds, e.g., for highly toxic or reactive organic compounds, provided the analyst can demonstrate to the Administrator's satisfaction that the surrogate compound behaves as the analyte. A surrogate may be an isotope or one that contains a unique element (e.g., chlorine) that is not present in the source or a derivation of the toxic or reactive compound, if the derivative formation is part of the method's procedure. Laboratory experiments or literature data may be used to show behavioral acceptability.

3.4 *Isotopically Labeled Materials.* Isotope mixtures may contain the isotope and the

natural analyte. For best results, the isotope labeled analyte concentration should be more than five times the natural concentration of the analyte.

#### 4. EPA Performance Audit Material

4.1 To assess the method bias independently, the analyst shall use (in addition to the reference material) an EPA performance audit material, if it is available. The analyst may contact EMTIC (see section 1.1.1) to receive a list of currently available EPA audit materials. If the analyte is listed, the analyst should request the audit material at least 30 days before the validation test. If an EPA audit material is not available, request documentation from the validation report reviewing authority that the audit material is currently not available from EPA. Include this documentation with the field validation report.

4.2 The analyst shall sample and analyze the performance audit sample three times according to the instructions provided with the audit sample. The analyst shall submit the three results with the field validation report. Although no acceptance criteria are set for these performance audit results, the analyst and reviewing authority may use them to assess the relative error of sample recovery, sample preparation, and analytical procedures and then consider the relative error in evaluating the measured emissions.

#### 5. Procedure for Determination of Bias and Precision in the Field

The analyst shall select one of the sampling approaches below to determine the bias and precision of the data. After analyzing the samples, the analyst shall calculate the bias and precision according to the procedure described in section 6.0. When sampling a stationary source, follow the probe placement procedures in section 5.4.

5.1 *Isotopic Spiking.* This approach shall be used only for methods that require mass spectrometry (MS) analysis. Bias and precision are calculated by procedures described in section 6.1.

5.1.1 *Number of Samples and Sampling Runs.* Collect a total of 12 replicate samples by either obtaining six sets of paired samples or three sets of quadruplet samples.

5.1.2 *Spiking Procedure.* Spike all 12 samples with the reference material at the level of the standard. Follow the appropriate spiking procedures listed below for the applicable waste medium.

5.1.2.1 *Exhaust Gas Testing.* The spike shall be introduced as close to the tip of the sampling probe as possible.

5.1.2.1.1 *Gaseous Reference Material with Sorbent or Impinger Sampling Trains.* Sample the reference material (in the laboratory or in the field) at a concentration which is close to the allowable concentration standard for

the time required by the method, and then sample the gas stream for an equal amount of time. The time for sampling both the reference material and gas stream should be equal; however, the time should be adjusted to avoid sorbent breakthrough.

5.1.2.1.2 *Gaseous Reference Material with Sample Container (Bag or Canister).* Spike the sample containers after completion of each test run with an amount equal to the allowable concentration standard of the emission point. The final concentration of the reference material shall approximate the level of the emission concentration in the stack. The volume amount of reference material shall be less than 10 percent of the sample volume.

5.1.2.1.3 *Liquid and Solid Reference Material with Sorbent or Impinger Trains.* Spike the trains with an amount equal to the allowable concentration standard before sampling the stack gas. The spiking should be done in the field; however, it may be done in the laboratory.

5.1.2.1.4 *Liquid and Solid Reference Material with Sample Container (Bag or Canister).* Spike the containers at the completion of each test run with an amount equal to the level of the emission standard.

5.1.2.2 *Other Waste Media.* Spike the 12 replicate samples with the reference material either before or directly after sampling in the field.

5.2 *Comparison Against a Validated Test Method.* Bias and precision are calculated using the procedures described in section 6.2. This approach shall be used when a validated method is available and an alternative method is being proposed.

5.2.1 *Number of Samples and Sampling Runs.* Collect nine sets of replicate samples using a paired sampling system (a total of 18 samples) or four sets of replicate samples using a quadruplet sampling system (a total of 16 samples). In each sample set, the validated test method shall be used to collect and analyze half of the samples.

5.2.2 *Performance Audit Exception.* Conduct the performance audit as required in section 4.0 for the validated test method. Conducting a performance audit on the test method being evaluated is recommended.

5.3 *Analyte Spiking.* This approach shall be used when sections 5.1 and 5.2 are not applicable. Bias and precision are calculated using the procedures described in Section 6.3.

5.3.1 *Number of Samples and Sampling Runs.* Collect a total of 24 samples using the quadruplet sampling system (a total of 6 sets of replicate samples).

5.3.2 In each quadruplet set, spike half of the samples (two out of the four) with the reference material according to the applicable procedure in section 5.1.2.1 or 5.1.2.2.

5.4 *Probe Placement and Arrangement for Stationary Source Stack or Duct Sampling.* The probes shall be placed in the same horizontal

plane. For paired sample probes the arrangement should be that the probe tip is 2.5 cm from the outside edge of the other with a pitot tube on the outside of each probe. Other paired arrangements for the pitot tube may be acceptable. For quadruplet sampling probes, the tips should be in a 6.0 cm × 6.0 cm square area measured from the center line of the opening of the probe tip with a single pitot tube in the center or two pitot tubes with their location on either side of the probe tip configuration. An alternative arrangement should be proposed whenever the cross-sectional area of the probe tip configuration is approximately 5 percent of the stack or duct cross-sectional area.

#### 6. Calculations

Data resulting from the procedures specified in section 5.0 shall be treated as follows to determine bias, correction factors, relative standard deviations, precision, and data acceptance.

6.1 *Isotopic Spiking*. Analyze the data for isotopic spiking tests as outlined in sections 6.1.1 through 6.1.6.

6.1.1 Calculate the numerical value of the bias using the results from the analysis of the isotopically spiked field samples and the calculated value of the isotopically labeled spike:

$$B = CS - S_m \quad \text{Eq. 301-1}$$

where:

B=Bias at the spike level.

$S_m$ =Mean of the measured values of the isotopically spiked samples.

CS=Calculated value of the isotopically labeled spike.

6.1.2 Calculate the standard deviation of the  $S_i$  values as follows:

$$SD = \sqrt{\frac{\sum (S_i - S_m)^2}{(n-1)}}$$

Eq. 301-2

where:

$S_i$ =Measured value of the isotopically labeled analyte in the  $i$ th field sample,  
 $n$ =Number of isotopically spiked samples, 12.

6.1.3. Calculate the standard deviation of the mean (SDM) as follows:

$$SDM = \frac{SD}{\sqrt{n}}$$

Eq. 301-3

6.1.4 Test the bias for statistical significance by calculating the t-statistic,

$$t = \frac{|B|}{SDM}$$

Eq. 301-4

and compare it with the critical value of the two-sided t-distribution at the 95-percent confidence level and  $n-1$  degrees of freedom. This critical value is 2.201 for the eleven degrees of freedom when the procedure specified in section 5.1.2 is followed. If the calculated t-value is greater than the critical value the bias is statistically significant and the analyst should proceed to evaluate the correction factor.

6.1.5 *Calculation of a Correction Factor*. If the t-test does not show that the bias is statistically significant, use all analytical results without correction and proceed to the precision evaluation. If the method's bias is statistically significant, calculate the correction factor, CF, using the following equation:

$$CF = \frac{1}{1 + \frac{B}{CS}}$$

Eq. 301-5

If the CF is outside the range of 0.70 to 1.30, the data and method are considered unacceptable. For correction factors within the range, multiply all analytical results by the CF to obtain the final values.

6.1.6 *Calculation of the Relative Standard Deviation (Precision)*. Calculate the relative standard deviation as follows:

$$RSD = \left( \frac{SD}{S_m} \right) \times 100$$

Eq. 301-6

where  $S_m$  is the measured mean of the isotopically labeled spiked samples.

6.2 *Comparison with Validated Method*. Analyze the data for comparison with a validated method as outlined in sections 6.2.1 or 6.2.2, as appropriate. Conduct these procedures in order to determine if a proposed

method produces results equivalent to a validated method. Make all necessary bias corrections for the validated method, as appropriate. If the proposed method fails either test, the method results are unacceptable, and conclude that the proposed method is not as precise or accurate as the validated method. For highly variable sources, additional precision checks may be necessary. The analyst should consult with the Administrator if a highly variable source is suspected.

#### 6.2.1 Paired Sampling Systems.

6.2.1.1. *Precision.* Determine the acceptance of the proposed method's variance with respect to the variability of the validated method results. If a significant difference is determined, the proposed method and the results are rejected. Proposed methods demonstrating F-values equal to or less than the critical value have acceptable precision.

6.2.1.2 Calculate the variance of the proposed method,  $S_p^2$ , and the variance of the validated method,  $S_v^2$ , using the following equation:

$$S_{(p \text{ or } v)}^2 = SD^2 \quad \text{Eq. 301-7}$$

where:

$SD_v$ =Standard deviation provided with the validated method,

$SD_p$ =Standard deviation of the proposed method calculated using Equation 301-9a.

6.2.1.3 *The F-test.* Determine if the variance of the proposed method is significantly different from that of the validated method by calculating the F-value using the following equation:

$$F = \frac{S_p^2}{S_v^2}$$

Eq. 301-8

Compare the experimental F value with the critical value of F. The critical value is 1.0 when the procedure specified in section 5.2.1 for paired trains is followed. If the calculated F is greater than the critical value, the difference in precision is significant and the data and proposed method are unacceptable.

6.2.1.4 *Bias Analysis.* Test the bias for statistical significance by calculating the t-statistic and determine if the mean of the differences between the proposed method and the validated method is significant at the 80-percent confidence level. This procedure requires the standard deviation of the validated method,  $SD_v$ , to be known. Employ the value furnished with the method. If the standard deviation of the validated method

is not available, the paired replicate sampling procedure may not be used. Determine the mean of the paired sample differences,  $d_m$ , and the standard deviation,  $SD_d$ , of the differences,  $d_i$ 's, using Equation 301-2 where:  $d_i$  replaces  $S_i$ ,  $d_m$  replaces  $S_m$ . Calculate the standard deviation of the proposed method,  $SD_p$ , as follows:

$$SD_p = SD_d - SD_v \quad \text{Eq. 301-9a}$$

(If  $SD_v > SD_d$ , let  $SD = SD_d/1.414$ ).

Calculate the value of the t-statistic using the following equation:

$$t = \frac{d_m}{\left( \frac{SD_p}{\sqrt{n}} \right)}$$

Eq. 301-9

where n is the total number of paired samples. For the procedure in section 5.2.1, n equals nine. Compare the calculated t-statistic with the corresponding value from the table of the t-statistic. When nine runs are conducted, as specified in section 5.2.1, the critical value of the t-statistic is 1.397 for eight degrees of freedom. If the calculated t-value is greater than the critical value the bias is statistically significant and the analyst should proceed to evaluate the correction factor.

6.2.1.5 *Calculation of a Correction Factor.* If the statistical test cited above does not show a significant bias with respect to the reference method, assume that the proposed method is unbiased and use all analytical results without correction. If the method's bias is statistically significant, calculate the correction factor, CF, as follows:

$$CF = \frac{1}{1 + \frac{d_m}{V_m}}$$

Eq. 301-10

where  $V_m$  is the mean of the validated method's values.

Multiply all analytical results by CF to obtain the final values. The method results, and the method, are unacceptable if the correction factor is outside the range of 0.9 to 1.10.

#### 6.2.2 Quadruplet Replicate Sampling Systems.

6.2.2.1 *Precision.* Determine the acceptance of the proposed method's variance with respect to the variability of the validated method results. If a significant difference is

determined the proposed method and the results are rejected.

6.2.2.2 Calculate the variance of the proposed method,  $S_p^2$ , using the following equation:

$$S^2 = \frac{\sum d_i^2}{2n}$$

Eq. 301-11

where the  $d_i$ 's are the differences between the validated method values and the proposed method values.

6.2.2.3 *The F-test.* Determine if the variance of the proposed method is more variable than that of the validated method by calculating the F-value using Equation 301-8. Compare the experimental F value with the critical value of F. The critical value is 1.0 when the procedure specified in section 5.2.2 for quadruplet trains is followed. The calculated F should be less than or equal to the critical value. If the difference in precision is significant the results and the proposed method are unacceptable.

6.2.2.4 *Bias Analysis.* Test the bias for statistical significance at the 80 percent confidence level by calculating the t-statistic. Determine the bias (mean of the differences between the proposed method and the validated method,  $d_m$ ) and the standard deviation,  $SD_d$ , of the differences. Calculate the standard deviation of the differences,  $SD_d$ , using Equation 301-2 and substituting  $d_i$  for  $S_i$ . The following equation is used to calculate  $d_i$ :

$$d_i = \frac{(V_{1i} + V_{2i})}{2} - \frac{(P_{1i} + P_{2i})}{2}$$

Eq. 301-12

and:  $V_{1i}$ =First measured value of the validated method in the  $i$ th test sample.

$P_{1i}$ =First measured value of the proposed method in the  $i$ th test sample.

Calculate the t-statistic using Equation 301-9 where  $n$  is the total number of test sample differences ( $d_i$ ). For the procedure in section 5.2.2,  $n$  equals four. Compare the calculated t-statistic with the corresponding value from the table of the t-statistic and determine if the mean is significant at the 80-percent confidence level. When four runs are conducted, as specified in section 5.2.2, the critical value of the t-statistic is 1.638 for three degrees of freedom. If the calculated t-value is greater than the critical value the bias is statistically significant and the ana-

lyst should proceed to evaluate the correction factor.

6.2.2.5 *Correction Factor Calculation.* If the method's bias is statistically significant, calculate the correction factor, CF, using Equation 301-10. Multiply all analytical results by CF to obtain the final values. The method results, and the method, are unacceptable if the correction factor is outside the range of 0.9 to 1.10.

6.3 *Analyte Spiking.* Analyze the data for analyte spike testing as outlined in Sections 6.3.1 through 6.3.3.

6.3.1 *Precision.*

6.3.1.1 *Spiked Samples.* Calculate the difference,  $d_i$ , between the pairs of the spiked proposed method measurements for each replicate sample set. Determine the standard deviation ( $SD_s$ ) of the spiked values using the following equation:

$$SD_s = \sqrt{\frac{\sum d_i^2}{2n}}$$

Eq. 301-13

where:  $n$  = Number of runs.

Calculate the relative standard deviation of the proposed spiked method using Equation 301-6 where  $S_m$  is the measured mean of the analyte spiked samples. The proposed method is unacceptable if the RSD is greater than 50 percent.

6.3.1.2 *Unspiked Samples.* Calculate the standard deviation of the unspiked values using Equation 301-13 and the relative standard deviation of the proposed unspiked method using Equation 301-6 where  $S_m$  is the measured mean of the analyte spiked samples. The RSD must be less than 50 percent.

6.3.2 *Bias.* Calculate the numerical value of the bias using the results from the analysis of the spiked field samples, the unspiked field samples, and the calculated value of the spike:

$$B = S_m - M_m - CS$$

Eq. 301-14

where:  $B$  = Bias at the spike level.

$S_m$  = Mean of the spiked samples.

$M_m$  = Mean of the unspiked samples.

$CS$  = Calculated value of the spiked level.

6.3.2.1 Calculate the standard deviation of the mean using the following equation where  $SD_s$  and  $SD_u$  are the standard deviations of the spiked and unspiked sample values respectively as calculated using Equation 301-13.

$$SD = \sqrt{SD_s^2 + SD_u^2}$$

Eq. 301-15

6.3.2.2 Test the bias for statistical significance by calculating the t-statistic using Equation 301-4 and comparing it with the critical value of the two-sided t-distribution at the 95-percent confidence level and n-1 degrees of freedom. This critical value is 2.201 for the eleven degrees of freedom.

6.3.3 *Calculation of a Correction Factor.* If the t-test shows that the bias is not statistically significant, use all analytical results without correction. If the method's bias is statistically significant, calculate the correction factor using Equation 301-5. Multiply all analytical results by CF to obtain the final values.

#### 7. Ruggedness Testing (Optional)

##### 7.1 *Laboratory Evaluation.*

7.1.1 Ruggedness testing is a useful and cost-effective laboratory study to determine the sensitivity of a method to certain parameters such as sample collection rate, interferant concentration, collecting medium temperature, or sample recovery temperature. This Section generally discusses the principle of the ruggedness test. A more detailed description is presented in citation 10 of Section 13.0.

7.1.2 In a ruggedness test, several variables are changed simultaneously rather than one variable at a time. This reduces the number of experiments required to evaluate the effect of a variable. For example, the effect of seven variables can be determined in eight experiments rather than 128 (W.J. Youden, *Statistical Manual of the Association of Official Analytical Chemists*, Association of Official Analytical Chemists, Washington, DC, 1975, pp. 33-36).

7.1.3 Data from ruggedness tests are helpful in extending the applicability of a test method to different source concentrations or source categories.

#### 8. Procedure for Including Sample Stability in Bias and Precision Evaluations

##### 8.1 *Sample Stability.*

8.1.1 The test method being evaluated must include procedures for sample storage and the time within which the collected samples shall be analyzed.

8.1.2 This section identifies the procedures for including the effect of storage time in bias and precision evaluations. The evaluation may be deleted if the test method specifies a time for sample storage.

8.2 *Stability Test Design.* The following procedures shall be conducted to identify the effect of storage times on analyte samples. Store the samples according to the procedure specified in the test method. When using the analyte spiking procedures (section 5.3), the

study should include equal numbers of spiked and unspiked samples.

##### 8.2.1 *Stack Emission Testing.*

8.2.1.1 For sample container (bag or canister) and impinger sampling systems, sections 5.1 and 5.3, analyze six of the samples at the minimum storage time. Then analyze the same six samples at the maximum storage time.

8.2.1.2 For sorbent and impinger sampling systems, sections 5.1 and 5.3, that require extraction or digestion, extract or digest six of the samples at the minimum storage time and extract or digest six other samples at the maximum storage time. Analyze an aliquot of the first six extracts (digestates) at both the minimum and maximum storage times. This will provide some freedom to analyze extract storage impacts.

8.2.1.3 For sorbent sampling systems, sections 5.1 and 5.3, that require thermal desorption, analyze six samples at the minimum storage time. Analyze another set of six samples at the maximum storage time.

8.2.1.4 For systems set up in accordance with section 5.2, the number of samples analyzed at the minimum and maximum storage times shall be half those collected (8 or 9). The procedures for samples requiring extraction or digestion should parallel those in section 8.2.1.

8.2.2 *Other Waste Media Testing.* Analyze half of the replicate samples at the minimum storage time and the other half at the maximum storage time in order to identify the effect of storage times on analyte samples.

#### 9. Procedure for Determination of Practical Limit of Quantitation (Optional)

##### 9.1 *Practical Limit of Quantitation.*

9.1.1 The practical limit of quantitation (PLQ) is the lowest level above which quantitative results may be obtained with an acceptable degree of confidence. For this protocol, the PLQ is defined as 10 times the standard deviation,  $s_0$ , at the blank level. This PLQ corresponds to an uncertainty of  $\pm 30$  percent at the 99-percent confidence level.

9.1.2 The PLQ will be used to establish the lower limit of the test method.

9.2 *Procedure I for Estimating  $s_0$ .* This procedure is acceptable if the estimated PLQ is no more than twice the calculated PLQ. If the PLQ is greater than twice the calculated PLQ use Procedure II.

9.2.1 Estimate the PLQ and prepare a test standard at this level. The test standard could consist of a dilution of the reference material described in section 3.0.

9.2.2 Using the normal sampling and analytical procedures for the method, sample and analyze this standard at least seven times in the laboratory.

9.2.3 Calculate the standard deviation,  $s_0$ , of the measured values.

9.2.4 Calculate the PLQ as 10 times  $s_0$ .

9.3 *Procedure II for Estimating  $s_0$* . This procedure is to be used if the estimated PLQ is more than twice the calculated PLQ.

9.3.1 Prepare two additional standards at concentration levels lower than the standard used in Procedure I.

9.3.2 Sample and analyze each of these standards at least seven times.

9.3.3 Calculate the standard deviation for each concentration level.

9.3.4 Plot the standard deviations of the three test standards as a function of the standard concentrations.

9.3.5 Draw a best-fit straight line through the data points and extrapolate to zero concentration. The standard deviation at zero concentration is  $S_0$ .

9.3.6 Calculate the PLQ as 10 times  $S_0$ .

#### 10.0 Field Validation Report Requirements

The field validation report shall include a discussion of the regulatory objectives for the testing which describe the reasons for the test, applicable emission limits, and a description of the source. In addition, validation results shall include:

10.1 Summary of the results and calculations shown in section 6.0.

10.2 Reference material certification and value(s).

10.3 Performance audit results or letter from the reviewing authority stating the audit material is currently not available.

10.4 Laboratory demonstration of the quality of the spiking system.

10.5 Discussion of laboratory evaluations.

10.6 Discussion of field sampling.

10.7 Discussion of sample preparations and analysis.

10.8 Storage times of samples (and extracts, if applicable).

10.9 Reasons for eliminating any results.

#### 11. Followup Testing

The correction factor calculated in section 6.0 shall be used to adjust the sample concentrations in all followup tests conducted at the same source. These tests shall consist of at least three replicate samples, and the average shall be used to determine the pollutant concentration. The number of samples to be collected and analyzed shall be as follows, depending on the validated method precision level:

11.1 Validated relative standard deviation (RSD)  $\leq \pm 15$  Percent. Three replicate samples.

11.2 Validated RSD  $\leq \pm 30$  Percent. Six replicate samples.

11.3 Validated RSD  $\leq \pm 50$  Percent. Nine replicate samples.

11.4 Equivalent method. Three replicate samples.

#### 12. Procedure for Obtaining a Waiver

12.1 *Waivers*. These procedures may be waived or a less rigorous protocol may be granted for site-specific applications. The following are three example situations for which a waiver may be considered.

12.1.1 "*Similar*" *Sources*. If the test method has been validated previously at a "similar" source, the procedures may be waived provided the requester can demonstrate to the satisfaction of the Administrator that the sources are "similar." The methods' applicability to the "similar" source may be demonstrated by conducting a ruggedness test as described in section 6.0.

12.1.2 "*Documented*" *Methods*. In some cases, bias and precision may have been documented through laboratory tests or protocols different from this method. If the analyst can demonstrate to the satisfaction of the Administrator that the bias and precision apply to a particular application, the Administrator may waive these procedures or parts of the procedures.

12.1.3 "*Conditional*" *Test Methods*. When the method has been demonstrated to be valid at several sources, the analyst may seek a "conditional" method designation from the Administrator. "Conditional" method status provides an automatic waiver from the procedures provided the test method is used within the stated applicability.

12.2 *Application for Waiver*. In general, the requester shall provide a thorough description of the test method, the intended application, and results of any validation or other supporting documents. Because of the many potential situations in which the Administrator may grant a waiver, it is neither possible nor desirable to prescribe the exact criteria for a waiver. At a minimum, the requester is responsible for providing the following.

12.2.1 A clearly written test method, preferably in the format of 40 CFR part 60, appendix A Test Methods. The method must include an applicability statement, concentration range, precision, bias (accuracy), and time in which samples must be analyzed.

12.2.2.2 Summaries (see section 10.0) of previous validation tests or other supporting documents. If a different procedure from that described in this method was used, the requester shall provide appropriate documents substantiating (to the satisfaction of the Administrator) the bias and precision values.

12.2.2.3 Results of testing conducted with respect to sections 7.0, 8.0, and 9.0.

12.2.3 Discussion of the applicability statement and arguments for approval of the waiver. This discussion should address as applicable the following: Applicable regulation, emission standards, effluent characteristics, and process operations.

12.3 *Requests for Waiver.* Each request shall be in writing and signed by the analyst. Submit requests to the Director, OAQPS, Technical Support Division, U.S. Environmental Protection Agency, Research Triangle Park, NC 27711.

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### METHOD 303—DETERMINATION OF VISIBLE EMISSIONS FROM BY-PRODUCT COKE OVEN BATTERIES

#### 1. Applicability and Principle

1.1 *Applicability.* This method applies to the determination of visible emissions (VE) from the following by-product coke oven battery sources: Charging systems during charging, doors, topside port lids, and offtake systems on operating coke ovens; and collecting mains. In order for the test method results to be indicative of plant performance, the time of day of the run should vary.

1.2 *Principle.* A certified observer visually determines the VE from coke oven battery sources (the certification procedures are described in section 2). This method does not require that opacity of emissions be determined or that magnitude be differentiated.

#### 1.3 Definitions.

1.3.1 *Bench.* The platform structure in front of the oven doors.

1.3.2 *By-product Coke Oven Battery.* A source consisting of a group of ovens connected by common walls, where coal undergoes destructive distillation under positive pressure to produce coke and coke oven gas, from which by-products are recovered.

1.3.3 *Charge or Charging Period.* The period of time that commences when coal begins to flow into an oven through a topside port and ends when the last charging port is recapped.

1.3.4 *Charging System.* An apparatus used to charge coal to a coke oven (e.g., a larry car for wet coal charging systems).

1.3.5 *Coke Oven Door.* Each end enclosure on the pusher side and the coking side of an oven. The chuck, or leveler-bar, door is considered part of the pusher side door. The coke oven door area includes the entire area on the vertical face of a coke oven between the bench and the top of the battery between two adjacent buck stays.

1.3.6 *Coke Side.* The side of a battery from which the coke is discharged from ovens at the end of the coking cycle.

1.3.7 *Collecting Main.* Any apparatus that is connected to one or more offtake systems and that provides a passage for conveying gases under positive pressure from the by-product coke oven battery to the by-product recovery system.

1.3.8 *Consecutive Charges.* Charges observed successively, excluding any charge

during which the observer's view of the charging system or topside ports is obscured.

1.3.9 Damper-off. To close off the gas passage between the coke oven and the collecting main, with no flow of raw coke oven gas from the collecting main into the oven or into the oven's offtake system(s).

1.3.10 Decarbonization Period. The period of time for combusting oven carbon that commences when the oven lids are removed from an empty oven or when standpipe caps of an oven are opened. The period ends with the initiation of the next charging period for that oven.

1.3.11 Larry Car. An apparatus used to charge coal to a coke oven with a wet coal charging system.

1.3.12 Log Average. Logarithmic average as calculated in section 3.8.

1.3.13 Offtake System. Any individual oven apparatus that is stationary and provides a passage for gases from an oven to a coke oven battery collecting main or to another oven. Offtake system components include the standpipe and standpipe caps, goosenecks, stationary jumper pipes, mini-standpipes, and standpipe and gooseneck connections.

1.3.14 Operating Oven. Any oven not out of operation for rebuild or maintenance work extensive enough to require the oven to be skipped in the charging sequence.

1.3.15 Oven. A chamber in the coke oven battery in which coal undergoes destructive distillation to produce coke.

1.3.16 Push Side. The side of the battery from which the coke is pushed from ovens at the end of the coking cycle.

1.3.17 Run. The observation of visible emissions from topside port lids, offtake systems, coke oven doors, or the charging of a single oven in accordance with this method.

1.3.18 Shed. Structures for capturing coke oven emissions on the coke side or pusher side of the coke oven battery, which route the emissions to a control device or system.

1.3.19 Standpipe Cap. An apparatus used to cover the opening in the gooseneck of an offtake system.

1.3.20 Topside Port Lid. A cover, removed during charging or decarbonizing, that is placed over the opening through which coal can be charged into the oven of a by-product coke oven battery.

1.3.21 Traverse Time. Accumulated time for a traverse as measured by a stopwatch. Traverse time includes time to stop and write down oven numbers but excludes time waiting for obstructions of view to clear or for time to walk around obstacles.

1.3.22 Visible Emissions (VE). Any emission seen by the unaided (except for corrective lenses) eye, excluding steam or condensing water.

## 2. Observer Certification

2.1 Certification Procedures. This method requires only the determination of whether VE occur and does not require the determination of opacity levels; therefore, observer certification according to Method 9 in appendix A to part 60 of this chapter is not required to obtain certification under this method. However, in order to receive Method 303 observer certification, the first-time observer (trainee) shall have attended the lecture portion of the Method 9 certification course. In addition, the trainee shall successfully complete the Method 303 training course, satisfy the field observation requirement, and demonstrate adequate performance and sufficient knowledge of Method 303. The Method 303 training course shall be conducted by or under the sanction of the EPA and shall consist of classroom instruction and field observations, and a proficiency test.

2.1.1 The classroom instruction shall familiarize the trainees with Method 303 through lecture, written training materials, and a Method 303 demonstration video. A successful completion of the classroom portion of the Method 303 training course shall be demonstrated by a perfect score on a written test. If the trainee fails to answer all of the questions correctly, the trainee may review the appropriate portion of the training materials and retake the test.

2.1.2 The field observations shall be a minimum of 12 hours and shall be completed before attending the Method 303 certification course. Trainees shall observe the operation of a coke oven battery as it pertains to Method 303, including topside operations, and shall also practice conducting Method 303 or similar methods. During the field observations, trainees unfamiliar with coke battery operations shall receive instruction from an experienced coke oven observer familiar with Method 303 or similar methods and the operation of coke batteries. The trainee must verify completion of at least 12 hours of field observation prior to attending the Method 303 certification course.

2.1.3 All trainees must demonstrate proficiency in the application of Method 303 to a panel of three certified Method 303 observers, including an ability to differentiate coke oven emissions from condensing water vapor and smoldering coal. Each panel member shall have at least 120 days experience in reading visible emissions from coke ovens. The visible emissions inspections that will satisfy the experience requirement must be inspections of coke oven battery fugitive emissions from the emission points subject to emission standards under subpart L of this part (i.e., coke oven doors, topside port lids, offtake system(s), and charging operations), using either Method 303 or predecessor State or local test methods. A "day's

experience" for a particular inspection is a day on which one complete inspection was performed for that emission point under Method 303 or a predecessor State or local method. A "day's experience" does not mean 8 or 10 hours performing inspections, or any particular time expressed in minutes or hours that may have been spent performing them. Thus, it would be possible for an individual to qualify as a Method 303 panel member for some emission points, but not others (e.g., an individual might satisfy the experience requirement for coke oven doors, but not topside port lids). Until November 15, 1994, the EPA may waive the certification requirement (but not the experience requirement) for panel members. The composition of the panel shall be approved by the EPA. The panel shall observe the trainee in a series of training runs and a series of certification runs. There shall be a minimum of 1 training run for doors, topside port lids, and offtake systems, and a minimum of 5 training runs (i.e., 5 charges) for charging. During training runs, the panel can advise the trainee on proper procedures. There shall be a minimum of 3 certification runs for doors, topside port lids, and offtake systems, and a minimum of 15 certification runs for charging (i.e., 15 charges). The certification runs shall be unassisted. Following the certification test runs, the panel shall approve or disapprove certification based on the trainee's performance during the certification runs. To obtain certification, the trainee shall demonstrate to the satisfaction of the panel a high degree of proficiency in performing Method 303. To aid in evaluating the trainee's performance, a checklist, provided by the EPA, will be used.

*Caution:* Because coke oven batteries have hazardous environments, the training materials and the field training shall cover the precautions required by the company to address health and safety hazards. Special emphasis shall be given to the Occupational Safety and Health Administration (OSHA) regulations pertaining to exposure of coke oven workers (see Citation 3 in the Bibliography). In general, the regulation requires that special fire-retardant clothing and respirators be worn in certain restricted areas of the coke oven battery. The OSHA regulation also prohibits certain activities, such as chewing gum, smoking, and eating in these areas.

2.2 Observer Certification/Recertification. The coke oven observer certification is valid for 1 year from date of issue. The observer shall recertify annually by viewing the training video and answering all of the questions on the certification test correctly. Every 3 years, an observer shall be required to pass the proficiency test in section 2.1.3 in order to be certified.

2.3 The EPA (or applicable enforcement agency) shall maintain records reflecting a

certified observer's successful completion of the proficiency test, which shall include the completed proficiency test checklists for the certification runs.

2.4 An owner or operator of a coke oven battery subject to subpart L of this part may observe a training and certification program under this section.

### 3. Procedure for Determining VE From Charging Systems During Charging

3.1 Number of Oven Charges. Refer to §63.309(c)(1) of this part for the number of oven charges to observe. The observer shall observe consecutive charges. Charges that are nonconsecutive can only be observed when necessary to replace observations terminated prior to the completion of a charge because of visual interferences. (See section 3.5.)

3.2 Data Records. Record all the information requested at the top of the charging system inspection sheet (Figure 303-1). For each charge, record the identification number of the oven being charged, the approximate beginning time of the charge, and the identification of the larry car used for the charge.

3.3 Observer Position. Stand in an area or move to positions on the topside of the coke oven battery with an unobstructed view of the entire charging system. For wet coal charging systems or non-pipeline coal charging systems, the observer should have an unobstructed view of the emission points of the charging system, including larry car hoppers, drop sleeves, and the topside ports of the oven being charged. Some charging systems are configured so that all emission points can only be seen from a distance of five ovens. For other batteries, distances of 8 to 12 ovens are adequate.

3.4 Observation. The charging period begins when coal begins to flow into the oven and ends when the last charging port is recapped. During the charging period, observe all of the potential sources of VE from the entire charging system. For wet coal charging systems or non-pipeline coal charging systems, sources of VE typically include the larry car hoppers, drop sleeves, slide gates, and topside ports on the oven being charged. Any VE from an open standpipe cap on the oven being charged is included as charging VE.

3.4.1 Using an accumulative-type stopwatch with unit divisions of at least 0.5 seconds, determine the total time VE are observed as follows. Upon observing any VE emerging from any part of the charging system, start the stopwatch. Stop the watch when VE are no longer observed emerging, and restart the watch when VE reemerges.

3.4.2 When VE occur simultaneously from several points during a charge, consider the sources as one. Time overlapping VE as continuous VE. Time single puffs of VE only for the time it takes for the puff to emerge from

the charging system. Continue to time VE in this manner for the entire charging period. Record the accumulated time to the nearest 0.5 second under "Visible emissions, seconds" on Figure 303-1.

3.5 Visual Interference. If fugitive VE from other sources at the coke oven battery site (e.g., door leaks or condensing water vapor from the coke oven wharf) prevent a clear view of the charging system during a charge, stop the stopwatch and make an appropriate notation under "Comments" on Figure 303-1. Label the observation an observation of an incomplete charge, and observe another charge to fulfill the requirements of section 3.1.

3.6 VE Exemptions. Do not time the following VE:

3.6.1 The VE from burning or smoldering coal spilled on top of the oven, topside port lid, or larry car surfaces;

NOTE: The VE from smoldering coal are generally white or gray. These VE generally have a plume of less than 1 meter long. If the observer cannot safely and with reasonable confidence determine that VE are from charging, do not count them as charging emissions.

3.6.2 The VE from the coke oven doors or from the leveler bar; or

3.6.3 The VE that drift from the top of a larry car hopper if the emissions had already been timed as VE from the drop sleeve.

NOTE: When the slide gate on a larry car hopper closes after the coal has been added to the oven, the seal may not be airtight. On occasions, a puff of smoke observed at the drop sleeves is forced past the slide gate up into the larry car hopper and may drift from the top; time these VE either at the drop sleeves or the hopper. If the larry car hopper does not have a slide gate or the slide gate is left open or partially closed, VE may quickly pass through the larry car hopper without being observed at the drop sleeves and will appear as a strong surge of smoke; time these as charging VE.

3.7 Total Time Record. Record the total time that VE were observed for each charging operation in the appropriate column on the charging system inspection sheet.

3.8 Five charging observations (runs) obtained in accordance with this method shall be considered a valid set of observations for that day. No observation of an incomplete charge shall be included in a daily set of observations that is lower than the lowest reading for a complete charge. If both complete and incomplete charges have been observed, the daily set of observations shall include the five highest values observed. Four or three charging observations (runs) obtained in accordance with this method shall be considered a valid set of charging observations only where it is not possible to obtain five charging observations, because of visual

interferences (see section 3.5) or inclement weather prevent a clear view of the charging system during charging. However, observations from three or four charges that satisfy these requirements shall not be considered a valid set of charging observations if use of such set of observations in a calculation under section 3.9 would cause the value of A to be less than 145.

3.9 Log Average. For each day on which a valid daily set of observations is obtained, calculate the daily 30-day rolling log average of seconds of visible emissions from the charging operation for each battery using these data and the 29 previous valid daily sets of observations, in accordance with the following equation:

$$\text{logarithmic average} = e^y - 1 \text{ (Eq. 303-1)}$$

where

$e=2.72$ ,

$$y = \frac{\ln(X_1 + 1) + \ln(X_2 + 1) + \dots + \ln(X_A + 1)}{A}$$

ln=Natural logarithm, and

$X_i$ =Seconds of VE during the  $i^{\text{th}}$  charge.

A=150 or the number of valid observations (runs). The value of A shall not be less than 145, except for purposes of determinations under §63.306(c) (work practice plan implementation) or §63.306(d) (work practice plan revisions) of this part. No set of observations shall be considered valid for such a recalculation that otherwise would not be considered a valid set of observations for a calculation under this paragraph.

#### 4. Procedure for Determining VE From Coke Oven Door Areas

The intent of this procedure is to determine VE from coke oven door areas by carefully observing the door area from a standard distance while walking at a normal pace.

4.1 Number of Runs. Refer to §63.309(c)(1) of this part for the appropriate number of runs.

4.2 Battery Traverse. To conduct a battery traverse, walk the length of the battery on the outside of the pusher machine and quench car tracks at a steady, normal walking pace, pausing to make appropriate entries on the door area inspection sheet (Figure 303-2). A single test run consists of two timed traverses, one for the coke side and one for the push side. The walking pace shall not exceed an average rate of 4 seconds per oven door, excluding time spent moving around stationary obstructions or waiting for other obstructions to move from positions blocking the view of a series of doors. Extra time is allowed for each leak for the observer to make the proper notation. A walking pace of 3 seconds per oven door has

been found to be typical. Record the actual traverse time with a stopwatch.

4.2.1 Time only the time spent observing the doors and recording door leaks. To measure actual traverse time, use an accumulative-type stopwatch with unit divisions of 0.5 seconds or less. Exclude interruptions to the traverse and time required for the observer to move to positions where the view of the battery is unobstructed, or for obstructions, such as the door machine, to move from positions blocking the view of a series of doors.

4.2.2 Various situations may arise that will prevent the observer from viewing a door or a series of doors. Prior to the door inspection, the owner or operator may elect to temporarily suspend charging operations for the duration of the inspection, so that all of the doors can be viewed by the observer. The observer has two options for dealing with obstructions to view: (a) Stop the stopwatch and wait for the equipment to move or the fugitive emissions to dissipate before completing the traverse; or (b) stop the stopwatch, skip the affected ovens, and move to a position to continue the traverse. Restart the stopwatch and continue the traverse. After the completion of the traverse, if the equipment has moved or the fugitive emissions have dissipated, inspect the affected doors. If the equipment is still preventing the observer from viewing the doors, then the affected doors may be counted as not observed. If option (b) is used because of doors blocked by machines during charging operations, then, of the affected doors, exclude the door from the most recently charged oven from the inspection. Record the oven numbers and make an appropriate notation under "Comments" on the door area inspection sheet (Figure 303-2).

4.2.3 When batteries have sheds to control emissions, conduct the inspection from outside the shed unless the doors cannot be adequately viewed. In this case, conduct the inspection from the bench. Be aware of special safety considerations pertinent to walking on the bench and follow the instructions of company personnel on the required equipment and operations procedures. If possible, conduct the bench traverse whenever the bench is clear of the door machine and hot coke guide.

4.3 Observations. Record all the information requested at the top of the door area inspection sheet (Figure 303-2), including the number of inoperable ovens. Record the clock time at the start of the traverse on each side of the battery. Record which side is being inspected, i.e., coke side or push side. Other information may be recorded at the discretion of the observer, such as the location of the leak (i.e., top of the door, chuck door, etc.), the reason for any interruption of the traverse, or the position of the sun relative to the battery and sky conditions (i.e., overcast, partly sunny, etc.).

4.3.1 Begin the test run by starting the stopwatch and traversing either the coke side or the push side of the battery. After completing one side, stop the watch. Complete this procedure on the other side. If inspecting more than one battery, the observer may view the push sides and the coke sides sequentially.

4.3.2 During the traverse, look around the entire perimeter of each oven door. The door is considered leaking if VE are detected in the coke oven door area. The coke oven door area includes the entire area on the vertical face of a coke oven between the bench and the top of the battery between two adjacent buck stays (e.g., the oven door, chuck door, between the masonry brick, buck stay or jamb, or other sources). Record the oven number and make the appropriate notation on the door area inspection sheet (Figure 303-2).

NOTE: Multiple VE from the same door area (e.g., VE from both the chuck door and the push side door) are counted as only one emitting door, not as multiple emitting doors.

4.3.3 Do not record the following sources as door area VE:

4.3.3.1 VE from ovens with doors removed. Record the oven number and make an appropriate notation under "Comments;"

4.3.3.2 VE from ovens taken out of service. The owner or operator shall notify the observer as to which ovens are out of service. Record the oven number and make an appropriate notation under "Comments;" or

4.3.3.3 VE from hot coke that has been spilled on the bench as a result of pushing.

4.4 Criteria for Acceptance. After completing the run, calculate the maximum time allowed to observe the ovens by the following equation:

$$T = (4 \times D_i) + (10 \times L) \quad (\text{Eq. 303-2})$$

where

T=Total time allowed for traverse, seconds;  
D<sub>i</sub>=Total number of oven doors on the battery; and  
L=Number of doors with VE.

4.4.1 If the total traverse time exceeds T, void the run, and conduct another run to satisfy the requirements of §63.309(c)(1) of this part.

4.5 Calculations for Percent Leaking Doors (PLD). Determine the total number of doors for which observations were made on the coke oven battery as follows:

$$D_{ob} = (2 \times N) - (D_i + D_{no}) \quad (\text{Eq. 303-3})$$

where

D<sub>ob</sub>=Total number of doors observed on operating ovens;  
D<sub>i</sub>=Number of doors on nonoperating ovens;

D<sub>no</sub>=Number of doors not observed; and  
 N=Total number of ovens in the battery.

4.5.1 For each test run (one run includes both the coke side and the push side traverses), sum the number of doors with door area VE. For batteries subject to an approved alternative standard under §63.305 of this part, calculate the push side and the coke side PLD separately.

4.5.2 Calculate percent leaking doors by using the following equation:

$$PLD = \frac{L_y}{D_{ob}} \times 100 \quad (\text{Eq. 303-4})$$

where

PLD=Percent leaking doors for the test run;  
 L<sub>y</sub>=Number of doors with VE observed from the yard; and

D<sub>ob</sub>=Total number of doors observed on operating ovens.

4.5.3 When traverses are conducted from the bench under sheds, calculate the coke side and the push side separately. Use the following equation to calculate a yard-equivalent reading:

$$L_b = L_s - (N \times 0.06) \quad (\text{Eq. 303-5})$$

where

N=Total number of ovens on the battery;  
 L<sub>b</sub>=Yard-equivalent reading; and  
 L<sub>s</sub>=Number of doors with VE observed from the bench under sheds.

If L<sub>b</sub> is less than zero, use zero for L<sub>b</sub> in Equation 303-6 in the calculation of PLD.

4.5.3.1 Use the following equation to calculate PLD:

$$PLD = \frac{L_b + L_y}{D_{ob}} \times 100 \quad (\text{Eq. 303-6})$$

where

PLD=Percent leaking coke oven doors for the run;

L<sub>b</sub>=Yard equivalent reading;

L<sub>y</sub>=Number of doors with VE observed from the yard on the push side; and

D<sub>ob</sub>=Total number of doors observed on operating ovens.

Round off PLD to the nearest hundredth of 1 percent and record as the percent leaking coke oven doors for the run.

4.5.3.2 30-day Rolling Average. For each day on which a valid observation is obtained, calculate the daily 30-day rolling average for each battery using these data and the 29 previous valid daily observations, in accordance with the following equation:

$$PLD(30\text{-day}) = \frac{(PLD_1 + PLD_2 + \dots + PLD_{30})}{30} \quad (\text{Eq. 303-7})$$

5. Procedure for Determining VE from Topside Port Lids and Offtake Systems

5.1 Number of Runs. Refer to §63.309(c)(1) of this part for the number of runs to be conducted. Simultaneous runs or separate runs for the topside port lids and offtake systems may be conducted.

5.2 Battery Traverse. To conduct a topside traverse of the battery, walk the length of the battery at a steady, normal walking pace, pausing only to make appropriate entries on the topside inspection sheet (Figure 303-3). The walking pace shall not exceed an average rate of 4 seconds per oven, excluding time spent moving around stationary obstructions or waiting for other obstructions to move from positions blocking the view. Extra time is allowed for each leak for the observer to make the proper notation. A walking pace of 3 seconds per oven is typical. Record the actual traverse time with a stopwatch.

5.3 Topside Port Lid Observations. To observe lids of the ovens involved in the charging operation, the observer shall wait to view the lids until approximately 5 minutes

after the completion of the charge. Record all the information requested on the topside inspection sheet (Figure 303-3). Record the clock time when traverses begin and end. If the observer's view is obstructed during the traverse (e.g., steam from the coke wharf, larry car, etc.), follow the guidelines given in section 4.2.2.

5.3.1 To perform a test run, conduct a single traverse on the topside of the battery. The observer shall walk near the center of the battery but may deviate from this path to avoid safety hazards (such as open or closed charging ports, luting buckets, lid removal bars, and topside port lids that have been removed) and any other obstacles. Upon noting VE from the topside port lid(s) of an oven, record the oven number and port number, then resume the traverse. If any oven is dampered-off from the collecting main for decarbonization, note this under "Comments" for that particular oven.

NOTE: Count the number of topside ports, not the number of points, exhibiting VE, i.e., if a topside port has several points of VE, count this as one port exhibiting VE.

5.3.2 Do not count the following as topside port lid VE:

5.3.2.1 VE from between the brickwork and oven lid casing or VE from cracks in the oven brickwork. Note these VE under "Comments;"

5.3.2.2 VE from topside ports involved in a charging operation. Record the oven number, and make an appropriate notation (i.e., not observed because ports open for charging) under "Comments;"

5.3.2.3 Topside ports having maintenance work done. Record the oven number and make an appropriate notation under "Comments;" or

5.3.2.4 Condensing water from wet-sealing material. Ports with only visible condensing water from wet-sealing material are counted as observed but not as having VE.

5.3.2.5 Visible emissions from the flue inspection ports and caps.

5.4 Offtake Systems Observations. To perform a test run, traverse the battery as in section 5.3.1. Look ahead and back two to four ovens to get a clear view of the entire offtake system for each oven. Consider visible emissions from the following points as offtake system VE: (a) the flange between the gooseneck and collecting main ("saddle"), (b) the junction point of the standpipe and oven ("standpipe base"), (c) the other parts of the offtake system (e.g., the standpipe cap), and (d) the junction points with ovens and flanges of jumper pipes.

5.4.1 Do not stray from the traverse line in order to get a "closer look" at any part of the offtake system unless it is to distinguish

leaks from interferences from other sources or to avoid obstacles.

5.4.2 If the centerline does not provide a clear view of the entire offtake system for each oven (e.g., when standpipes are longer than 15 feet), the observer may conduct the traverse farther from (rather than closer to) the offtake systems.

5.4.3 Upon noting a leak from an offtake system during a traverse, record the oven number. Resume the traverse. If the oven is dampered-off from the collecting main for decarbonization and VE are observed, note this under "Comments" for that particular oven.

5.4.4 If any part or parts of an offtake system have VE, count it as one emitting offtake system. Each stationary jumper pipe is considered a single offtake system.

5.4.5 Do not count standpipe caps open for a decarbonization period or standpipes of an oven being charged as source of offtake system VE. Record the oven number and write "Not observed" and the reason (i.e., decarb or charging) under "Comments."

NOTE: VE from open standpipes of an oven being charged count as charging emissions. All VE from closed standpipe caps count as offtake leaks.

5.5 Criteria for Acceptance. After completing the run (allow 2 traverses for batteries with double mains), calculate the maximum time allowed to observe the topside port lids and/or offtake systems by the following equation:

$$T = (4 \text{ sec} \times N) + (10 \text{ sec} \times Z) \quad (\text{Eq. (303-8)})$$

where

T=Total time allowed for traverse, seconds;  
N=Total number of ovens in the battery; and  
Z=Number of topside port lids or offtake systems with VE.

5.5.1 If the total traverse time exceeds T, void the run and conduct another run to satisfy the requirements of §63.309(c)(1) of this part.

5.6 In determining the percent leaking topside port lids and percent leaking offtake systems, do not include topside port lids or offtake systems with VE from the following ovens:

5.6.1 Empty ovens, including ovens undergoing maintenance, which are properly dampered off from the main.

5.6.2 Ovens being charged or being pushed.

5.6.3 Up to 3 full ovens that have been dampered off from the main prior to pushing.

5.6.4 Up to 3 additional full ovens in the pushing sequence that have been dampered off from the main for offtake system cleaning, for decarbonization, for safety reasons, or when a charging/pushing schedule involves widely separated ovens (e.g., a Marquard system); or that have been dampered off from the main for maintenance near the end of the coking cycle. Examples of reasons that ovens are dampered off for safety reasons are to avoid exposing workers in areas with insufficient clearance between standpipes and the larry car, or in areas where workers could be exposed to flames or hot gases from open standpipes, and to avoid the potential for removing a door on an oven that is not dampered off from the main.

5.6.5 Topside Port Lids. Determine the percent leaking topside port lids for each run as follows:

$$\text{PLL} = \frac{P_{VE}}{P_{ovn}(N - N_i) - P_{NO}} \times 100 \quad (\text{Eq. 303-9})$$

where

PLL=Percent leaking topside port lids for the run;

$P_{VE}$ =Number of topside port lids with VE;

$P_{ovn}$ =Number of ports per oven;

$N$ =Total number of ovens in the battery;

$N_i$ =Number of inoperable ovens; and

$P_{NO}$ =Number of ports not observed.

5.6.5.1 Round off this percentage to the nearest hundredth of 1 percent and record this percentage as the percent leaking topside port lids for the run.

5.6.5.2 30-day Rolling Average. For each day on which a valid daily observation is obtained, calculate the daily 30-day rolling average for each battery using these data and the 29 previous valid daily observations, in accordance with the following equation:

$$\text{PLL}(30\text{-day}) = \frac{(\text{PLL}_1 + \text{PLL}_2 + \dots + \text{PLL}_{30})}{30} \quad (\text{Eq. 303-10})$$

5.6.6 Offtake Systems. Determine the percent leaking offtake systems for the run as follows:  
where

$$PLO = \frac{T_{VE}}{T_{ovn}(N - N_i) + J - T_{NO}} \times 100 \quad (\text{Eq. 303-11})$$

PLO=Percent leaking offtake systems;  
T<sub>VE</sub>=Number of offtake systems with VE;  
T<sub>ovn</sub>=Number of offtake systems (excluding jumper pipes) per oven;  
N=Total number of ovens in the battery;  
N<sub>i</sub>=Total number of inoperable ovens;  
T<sub>NO</sub>=Number of offtake systems not observed; and  
J=Number of stationary jumper pipes.

5.6.6.1 Round off this percentage to the nearest hundredth of 1 percent and record this percentage as the percent leaking offtake systems for the run.  
5.6.6.2 30-day Rolling Average. For each day on which a valid daily observation is obtained, calculate the daily 30-day rolling average for each battery using these data and the 29 previous valid daily observations, in accordance with the following equation:

$$PLO(30\text{-day}) = \frac{(PLO_1 + PLO_2 + \dots + PLO_{30})}{30} \quad (\text{Eq. 303-12})$$

6. Procedure for Determining VE From Collecting Mains

6.1 Traverse. To perform a test run, traverse both the collecting main catwalk and the battery topside along the side closest to the collecting main. If the battery has a double main, conduct two sets of traverses for each run, i.e., one set for each main.

6.2 Data Recording. Upon noting VE from any portion of a collection main, identify the source and approximate location of the source of VE and record the time under "Collecting main" on Figure 303-3; then resume the traverse.

6.3 Collecting Main Pressure Check. After the completion of the door traverse, the topside port lids, and offtake systems, compare the collecting main pressure during the inspection to the collecting main pressure during the previous 8 to 24 hours. Record the following: (a) The pressure during inspection, (b) presence of pressure deviation from normal operations, and (c) the explanation for any pressure deviation from normal operations, if any, offered by the operators. The owner or operator of the coke battery shall maintain the pressure recording equipment and conduct the quality assurance/quality control (QA/QC) necessary to ensure reliable pressure readings and shall keep the QA/QC records for at least 6 months. The observer,

my periodically check the QA/QC records to determine their completeness. The owner or operator shall provide access to the records within 1 hour of an observer's request.

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METHOD 303A—DETERMINATION OF VISIBLE EMISSIONS FROM NONRECOVERY COKE OVEN BATTERIES

1. *Applicability and Principle*

1.1 *Applicability.* This method determines percent leaking doors.

1.2 *Principle.* A certified observer visually determines the VE from coke oven battery sources. This method does not require that opacity of emissions be determined or that magnitude be differentiated.

1.3 *Definitions.*

1.3.1 *Bench.* The platform structure in front of the oven doors.

1.3.2 *Nonrecovery Coke Oven Battery.* A source consisting of a group of ovens connected by common walls and operated as a unit, where coal undergoes destructive distillation under negative pressure to produce coke, and which is designed for the combustion of coke oven gas from which by-products are not recovered.

1.3.3 *Coke Oven Door.* Each end enclosure on the pusher side and the coking side of an oven.

1.3.4 *Coke Side.* The side of a battery from which the coke is discharged from ovens at the end of the coking cycle.

1.3.5 *Operating Oven.* Any oven not out of operation for rebuild or maintenance work extensive enough to require the oven to be skipped in the charging sequence.

1.3.6 *Oven.* A chamber in the coke oven battery in which coal undergoes destructive distillation to produce coke.

1.3.7 *Push Side.* The side of the battery from which the coke is pushed from ovens at the end of the coking cycle.

1.3.8 *Run.* The observation of visible emissions from coke oven doors in accordance with the procedures in this method.

1.3.9 *Shed.* An enclosure that covers the side of the coke oven battery, captures emissions from pushing operations and from leaking coke oven doors on the coke side or pusher side of the coke oven battery, and routes the emissions to a control device or system.

2. *Training*

2.1 *Training.* This method requires only the determination of whether VE occur and does not require the determination of opacity levels; therefore, observer certification according to Method 9 in appendix A to part 60 of this chapter is not required. However, the first-time observer (trainee) shall have attended the lecture portion of the Method 9 certification course. Furthermore, before conducting any VE observations, an observer shall become familiar with nonrecovery coke oven battery operations and with this test method by observing for a minimum of 4 hours the operation of a nonrecovery coke oven battery.

3. *Procedure for Determining VE From Coke Oven Door Areas*

The intent of this procedure is to determine VE from coke oven door areas by carefully observing the door area while walking at a normal pace.

3.1 *Number of Runs.* Refer to §63.309(c)(1) of this part for the appropriate number of runs.

3.2 *Battery Traverse.* To conduct a battery traverse, walk the length of the battery on the outside of the pusher machine and quench car tracks at a steady, normal walking pace, pausing to make appropriate entries on the door area inspection sheet (Figure 303A-1). A single test run consists of two timed traverses, one for the coke side and one for the push side.

3.2.1 Various situations may arise that will prevent the observer from viewing a door or a series of doors. The observer has two options for dealing with obstructions to view: (a) Wait for the equipment to move or the fugitive emissions to dissipate before completing the traverse; or (b) skip the affected ovens and move to a position to continue the traverse. Continue the traverse. After the completion of the traverse, if the equipment has moved or the fugitive emissions have dissipated, complete the traverse by inspecting the affected doors. Record the oven numbers and make an appropriate notation under "Comments" on the door area inspection sheet (Figure 303A-1).

3.2.2 When batteries have sheds to control pushing emissions, conduct the inspection from outside the shed, if the shed allows such observations, or from the bench. Be aware of special safety considerations pertinent to walking on the bench and follow the instructions of company personnel on the required equipment and operations procedures. If possible, conduct the bench traverse whenever the bench is clear of the door machine and hot coke guide.

3.3 *Observations.* Record all the information requested at the top of the door area inspection sheet (Figure 303A-1), including the number of inoperable ovens. Record which side is being inspected, i.e., coke side or push side. Other information may be recorded at the discretion of the observer, such as the location of the leak (e.g., top of the door), the reason for any interruption of the traverse, or the position of the sun relative to the battery and sky conditions (i.e., overcast, partly sunny, etc.).

3.3.1 Begin the test run by traversing either the coke side or the push side of the battery. After completing one side, traverse the other side.

3.3.2 During the traverse, look around the entire perimeter of each oven door. The door is considered leaking if VE are detected in the coke oven door area. The coke oven door area includes the entire area on the vertical

face of a coke oven between the bench and the top of the battery. Record the oven number and make the appropriate notation on the door area inspection sheet (Figure 303A-1).

3.3.3 Do not record the following sources as door area VE:

3.3.3.1 VE from ovens with doors removed. Record the oven number and make an appropriate notation under "Comments;"

3.3.3.2 VE from ovens where maintenance work is being conducted. Record the oven number and make an appropriate notation under "Comments;" or

3.3.3.3 VE from hot coke that has been spilled on the bench as a result of pushing.

3.4 Calculations for percent leaking doors (PLD). Determine the total number of doors for which observations were made on the coke oven battery as follows:

$$D_{ob} = (2 \times N) - (D_i + D_{no}) \quad (\text{Eq. 303A-1})$$

where

$D_{ob}$ =Total number of doors observed on operating ovens;

$D_i$ =Number of doors on nonoperating ovens;

$D_{no}$ =Number of doors not observed; and

$N$ =Total number of ovens in the battery.

3.4.1 For each test run (one run includes both the coke side and the push side traverses), sum the number of doors with door area VE.

NOTE: Multiple VE from the same door area are counted as only one emitting door, not as multiple emitting doors.

3.4.2 Calculate percent leaking doors by using the following equation:

$$PLD = \frac{L_y}{D_{ob}} \times 100 \quad (\text{Eq. 303A-2})$$

where

PLD=Percent leaking doors for the test run;

$L_y$ =Number of doors with VE observed from the yard; and

$D_{ob}$ =Total number of doors observed on operating ovens.

3.4.3 When traverses are conducted from the bench under sheds, calculate the coke side and the push side reading separately. Use the following equation to calculate a yard-equivalent reading for the coke side:

$$L_b = L_s - (N \times 0.06) \quad (\text{Eq. 303A-3})$$

where

$N$ =Total number of ovens on the battery;

$L_b$ =Yard-equivalent reading; and

$L_s$ =Number of doors with VE observed from the bench under sheds.

If  $L_b$  is less than zero, use zero for  $L_b$  in Equation 303A-4 in the calculation of PLD.

3.4.3.1 Use the following equation to calculate PLD:

$$PLD = \frac{L_b + L_y}{D_{ob}} \times 100 \quad (\text{Eq. 303A-4})$$

where

PLD=Percent leaking coke oven doors for the run;

$L_b$ =Yard equivalent reading;

$L_y$ =Number of doors with VE observed from the yard on the push side; and

$D_{ob}$ =Total number of doors observed on operating ovens.

Round off PLD to the nearest hundredth of 1 percent and record as the percent leaking coke oven doors for the run.

3.4.3.2 30-day Rolling Average. For each day on which a valid observation is obtained, calculate the daily 30-day rolling average for each battery using these data and the 29 previous valid daily observations, in accordance with the following equation:

$$PLD(30\text{-day}) = \frac{(PLD_1 + PLD_2 + \dots + PLD_{30})}{30} \quad (\text{Eq. 303-5})$$

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**Environmental Protection Agency**

**Pt. 63, App. A**

Batteries; Proposed Rule and Notice of Public Hearing. Washington, DC FEDERAL REGISTER. Vol. 52, No. 78 (13586). April 23, 1987.



## METHOD 304A: DETERMINATION OF BIODEGRADATION RATES OF ORGANIC COMPOUNDS (VENT OPTION)

*1. Applicability and Principle*

1.1 *Applicability.* This method is applicable for the determination of biodegradation rates of organic compounds in an activated sludge process. The test method is designed to evaluate the ability of an aerobic biological reaction system to degrade or destroy specific components in waste streams. The method may also be used to determine the effects of changes in wastewater composition on operation. The biodegradation rates determined by utilizing this method are not representative of a full-scale system. The rates measured by this method shall be used in conjunction with the procedures listed in Appendix C of this part to calculate the fraction emitted to the air versus the fraction biodegraded.

1.2 *Principle.* A self-contained benchtop bioreactor system is assembled in the laboratory. A sample of mixed liquor is added and the waste stream is then fed continuously. The bioreactor is operated under conditions identical to the target full-scale activated sludge process. Bioreactor temperature, dissolved oxygen concentration, average residence time in the reactor, waste composition, biomass concentration, and biomass composition of the full-scale process are the parameters which are duplicated in the laboratory system. If antifoaming agents are used in the full-scale system, they shall

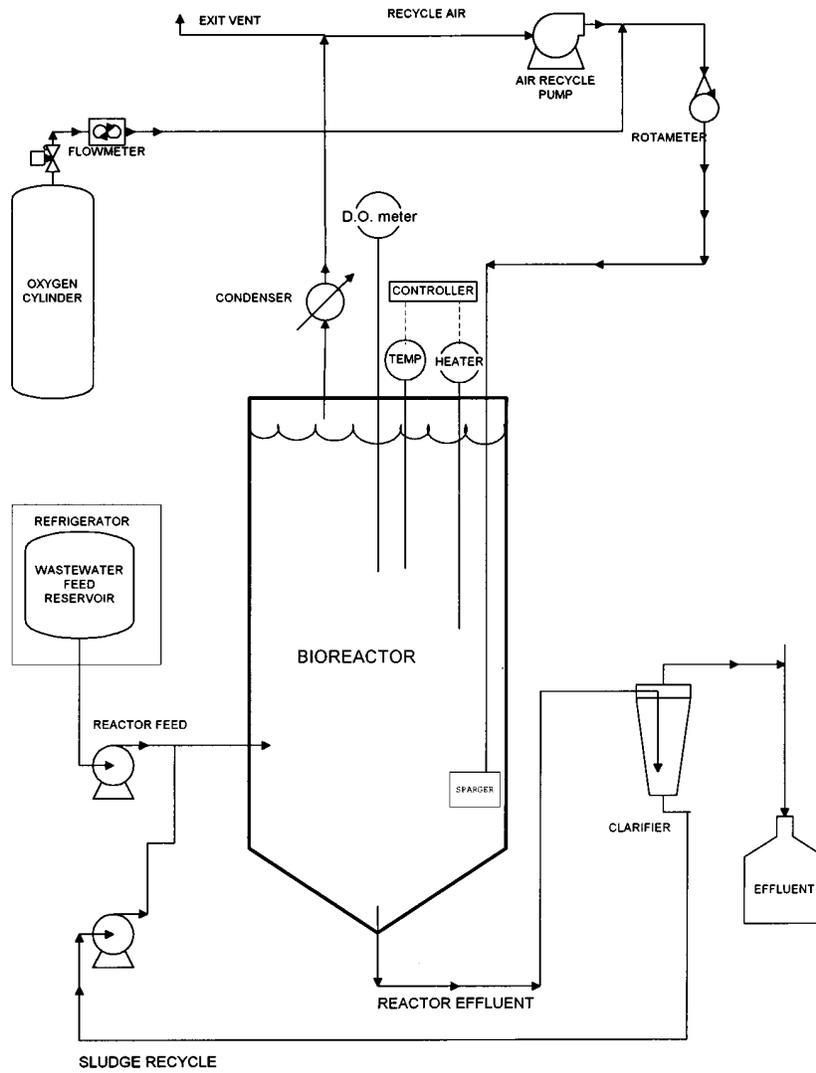
also be used in the bioreactor. The feed flowing into the reactor and the effluent exiting the reactor are analyzed to determine the biodegradation rates of the target compounds. The flow rate of the exit vent is used to calculate the concentration of target compounds (utilizing Henry's law) in the exit gas stream. If Henry's law constants for the compounds of interest are not known, this method cannot be used in the determination of the biodegradation rate and Method 304B is the suggested method. The choice of analytical methodology for measuring the compounds of interest at the inlet and outlet to the reactor are left to the discretion of the source, except where validated methods are available.

*2. Apparatus*

Figure 1 illustrates the typical laboratory apparatus used to measure biodegradation rates. Throughout the testing period, ensure that the bioreactor system is self-contained and isolated from the atmosphere (except for the exit vent stream) by leak-checking fittings, tubing, etc.

*2.1 Laboratory apparatus.*

2.1.1 *Reactor.* The biological reaction is conducted in a conical 6-L glass biological oxidation reactor. The reactor is sealed and equipped with internal probes to control and monitor dissolved oxygen and internal temperature. The top of the reactor is tapped for aerators, gas flow ports, and instrumentation (while ensuring that no leaks to the atmosphere exist around the fittings).



EPA METHOD 304A VENT BIOREACTOR SYSTEM

2.1.2 Aeration gas. Aeration gas is added to the reactor through three diffusers, which are glass tubes (4 mm O.D.) that extend to the bottom fifth of the reactor depth. A pure oxygen pressurized cylinder is recommended in order to maintain the specified oxygen concentration. Install a blower (Diaphragm Type, 15 SCFH capacity) to blow the aeration gas into the reactor diffusers. Measure the aeration gas flow rate with a rotameter (0–15 SCFH recommended). The aeration gas will rise through the reactor, dissolving oxygen into the mixture in the process. The aeration gas must provide sufficient agitation to keep the solids in suspension. Provide an exit for the aeration gas from the top flange of the reactor through a water-cooled Allihn-type condenser. Install the condenser through a gas-tight fitting in the reactor closure. Install a splitter which directs a portion of the gas to an exit vent and the rest of the gas through an air recycle pump back to the reactor. Monitor and record the flow rate through the exit vent at least 3 times per day throughout the day.

2.1.3 Wastewater Feed. Supply the wastewater feed to the reactor in a 20-L collapsible low-density polyethylene container equipped with a spigot cap (collapsible containers of other material may be required due to the permeability of some volatile compounds through polyethylene). Obtain the wastewater feed by sampling the wastewater feed in the target process. A representative sample of wastewater shall be obtained from the piping leading to the aeration tank. This sample may be obtained from existing sampling valves at the discharge of the wastewater feed pump, or collected from a pipe discharging to the aeration tank, or by pumping from a well-mixed equalization tank upstream from the aeration tank. Alternatively, wastewater can be pumped continuously to the laboratory apparatus from a bleed stream taken from the equalization tank of the full-scale treatment system.

2.1.3.1 Refrigeration System. Keep the wastewater feed cool by ice or by refrigeration to 4 °C. If using a bleed stream from the process, refrigeration is not required if the residence time in the bleed stream is less than five minutes.

2.1.3.2 Wastewater Feed Pump. The wastewater is pumped from the refrigerated container using a variable-speed peristaltic pump drive equipped with a peristaltic pump head. Add the feed solution to the reactor through a fitting on the top flange. Determine the rate of feed addition to provide a retention time in the bioreactor that is numerically equivalent to the retention time in the full-scale system. The wastewater shall be fed at a rate sufficient to achieve 90 to 100 percent of the full-scale system residence time.

2.1.3.3 Treated wastewater feed. The reactor effluent exits at the bottom of the reactor through a tube and proceeds to the clarifier.

2.1.4 Clarifier. The effluent flows to a clarifier constructed from a 2-liter pear-shaped glass separatory funnel, modified by removing the stopcock and adding a 25-mm OD glass tube at the bottom. Reactor effluent enters the clarifier through a tube inserted to a depth of 0.08 m (3 in.) through a stopper at the top of the clarifier. System effluent flows from a tube inserted through the stopper at the top of the clarifier to a drain (or sample bottle when sampling). The underflow from the clarifier leaves from the glass tube at the bottom of the clarifier through an o-ring fitting and a reducer. Flexible tubing connects this fitting to the sludge recycle pump. This pump is coupled to a variable speed pump drive. The discharge from this pump is returned through a tube inserted in a port on the side of the reactor. An additional port is provided near the bottom of the reactor for sampling the reactor contents. The mixed liquor from the reactor flows into the center of the clarifier. The clarified system effluent separates from the biomass and flows through an exit near the top of the clarifier. There shall be no headspace in the clarifier. Optional Clarifier Design: An internal clarifier may be used instead of the external clarifier described here as long as the biomass concentration is maintained to method specifications.

2.1.5 Temperature Control Apparatus. Capable of maintaining the system at a temperature equal to the temperature of the full-scale system,  $\pm 2$  °C.

2.1.5.1 Temperature Monitoring Device. A resistance type temperature probe or a thermocouple connected to a temperature readout with a resolution of 0.1 °C.

2.1.5.2 Reactor Heater. The heater is connected to the temperature control device.

2.1.6 Oxygen Control System. Maintain the dissolved oxygen concentration at the levels present in the full-scale system,  $\pm 0.5$  mg/L.

2.1.6.1 Dissolved Oxygen Monitor. Dissolved oxygen is monitored with a polarographic probe (gas permeable membrane) connected to a dissolved oxygen meter (0 to 15 mg/L, 0 to 50 °C).

2.1.6.2 Reactor Pressure Monitor. The reactor pressure is monitored through a port in the top flange of the reactor. This is connected to a gauge control with a span of 13-cm water vacuum to 13-cm water pressure. A relay is activated when the vacuum exceeds an adjustable setpoint which opens a solenoid valve (normally closed), admitting oxygen to the system. The vacuum setpoint controlling oxygen addition to the system shall be set at approximately  $2.5 \pm 0.5$  cm water and maintained at this setting except during

brief periods when the dissolved oxygen concentration is adjusted.

2.1.7 Connecting Tubing. All connecting tubing shall be Teflon or equivalent in impermeability. The only exception to this specification is the tubing directly inside the pump head of the wastewater feed pump, which may be Viton, Silicone or another type of flexible tubing.

2.2 Analysis. If the identity of the compounds of interest in the wastewater is not known to the source, a representative sample of the wastewater shall be analyzed in order to identify all of the compounds of interest present. A gas chromatography/mass spectrometry screening method is recommended.

2.2.1 After identifying the compounds of interest in the wastewater, develop an analytical technique capable of measuring all of those compounds (more than one analytical technique may be required, depending on the characteristics of the wastewater). Test Method 18, found in Appendix A of 40 CFR part 60, may be used as a guideline in developing the analytical technique. Purge and trap techniques may be used for analysis providing the target components are sufficiently volatile as to make this technique appropriate. The limit of quantitation for each compound shall be determined.<sup>1</sup> If the effluent concentration of any target compound is below the limit of quantitation determined for that compound, use the limit of quantitation concentration as the outlet concentration for that compound in the biodegradation calculations.

2.2.2 Calibration Standards. Prepare calibration standards from pure certified standards in an aqueous medium. Prepare and analyze three concentrations of calibration standards for each target component (or for a mixture of components) in triplicate daily throughout the analyses of the test samples. At each concentration level, a single calibration shall be within 5 percent of the average of the three calibration results. The low and medium calibration standards shall bracket the expected concentration of the effluent (treated) wastewater. The medium and high standards shall bracket the expected influent concentration.

2.3 Audit Analysis. Analyze a performance audit sample during every compliance test, if an audit sample is available. Audit availability information may be obtained by contacting the Emission Measurement Technical Information Center at (919) 541-2237. Use the same analytical equipment and analyst used in conducting the compliance test to conduct the audit analysis.

### 3. Reagents

3.1 Wastewater. Obtain a representative sample of wastewater at the inlet to the full-scale treatment plant if there is an existing full-scale treatment plant (See Section 2.1.3).

If there is no existing full-scale treatment plant, obtain the wastewater sample as close to the point of generation as possible. Collect the sample by pumping the wastewater into the 20-L collapsible container. The loss of volatiles shall be minimized from the wastewater by collapsing the container before filling, by minimizing the time of filling, and by avoiding a headspace in the container after filling. If the wastewater requires the addition of nutrients to support the biomass growth and maintain biomass characteristics, those nutrients are added and mixed with the container contents after the container is filled.

3.2 Biomass. Obtain the biomass or activated sludge used for rate constant determination in the bench-scale process from the existing full-scale process or from a representative biomass culture that has been developed for a future full-scale process. This biomass is preferentially obtained from a thickened acclimated mixed liquor sample. Collect the sample either by bailing from the mixed liquor in the aeration tank with a weighted container, or by collecting aeration tank effluent at the effluent overflow weir. Transport the sample to the laboratory within 12 hours of collection. Maintain the biomass concentration in the reactor at the level of the full-scale system  $\pm 10$  percent throughout the sampling period of the test method.

### 4. Procedure.

SAFETY NOTE: If explosive gases are produced as a byproduct of biodegradation, closely monitor headspace concentration of these gases to ensure laboratory safety. Placement of bioreactor system inside a laboratory hood is recommended regardless of byproducts produced.

4.1 Reactor Operation. Charge the mixed liquor to the reactor, minimizing headspace over the liquid surface to minimize entrainment of mixed liquor in the circulating gas. Fasten the reactor headplate to the reactor over the liquid surface. Maintain the temperature of the contents of the laboratory reactor system at the temperature of the full-scale system,  $\pm 2$  °C, throughout the testing period. Monitor and record the temperature of the reactor contents to the nearest 0.1 °C.

4.1.1 Wastewater Storage. Collect the wastewater sample in the 20-L collapsible container. Store the container at 4 °C throughout the testing period. Connect the container to the reactor feed pump.

4.1.2 Wastewater Flow Rate. The hydraulic residence time of the aeration tank is calculated as the ratio of the volume of the tank (L) to the flow rate (L/min). At the beginning of a test the container shall be connected to the feed pump and solution pumped to the reactor at the required flow rate to achieve the calculated hydraulic residence time of the aeration tank.

$$Q_{\text{test}} = Q_{\text{fs}} \frac{L}{V_{\text{fs}}} \quad \text{Eq. 304A-1}$$

where:

$Q_{\text{test}}$ =wastewater flow rate (L/min)

$Q_{\text{fs}}$ =average flow rate of full-scale process (L/min)

$V_{\text{fs}}$ =volume of full-scale aeration tank (L)

The flow rate in the test apparatus is the same as the flow rate in the full-scale process multiplied by the ratio of bioreactor volume (6 L) to the volume of the full-scale aeration tank. The hydraulic residence time shall be maintained at 90 to 100 percent of the residence time maintained in the full-scale unit. A nominal flow rate is set on the pump based on a pump calibration. Changes in the elasticity of the tubing in the pump head and the accumulation of material in the tubing affect this calibration. The nominal pumping rate shall be changed as necessary based on volumetric flow measurements. Discharge the reactor effluent to a wastewater storage, treatment, or disposal facility, except during sampling or flow measurement periods.

**4.1.3 Sludge Recycle Rate.** Set the sludge recycle rate at a rate sufficient to prevent accumulation in the bottom of the clarifier. Set the air circulation rate sufficient to maintain the biomass in suspension.

**4.1.4 Bioreactor Operation and Maintenance.** Temperature, dissolved oxygen concentration, exit vent flow rate, reactor effluent flow rate, and air circulation rate shall be measured and recorded three times throughout each day of reactor operation. If other parameters (such as pH) are measured and maintained in the full-scale unit, these parameters shall be monitored and maintained to full-scale specifications in the bioreactor. At the beginning of each sampling period (Section 4.2), sample the reactor contents for suspended solids analysis. Take this sample by loosening a clamp on a length of tubing attached to the lower side port. Determine the suspended solids determination gravimetrically by the Gooch crucible/glass fiber filter method for total suspended solids, in accordance with Standard Methods<sup>3</sup> or equivalent. When necessary, sludge shall be wasted from the lower side port of the reactor, and the volume that is wasted shall be replaced with an equal volume of the reactor effluent. Add thickened activated sludge mixed liquor as necessary to the reactor to increase the suspended solids concentration to the desired level. Pump this mixed liquor to the reactor through the upper side port (Item 24 in Figure 1). Change the membrane on the dissolved oxygen probe before starting the test. Calibrate the oxygen probe imme-

diately before the start of the test and each time the membrane is changed.

**4.1.5 Inspection and Correction Procedures.** If the feed line tubing becomes clogged, replace with new tubing. If the feed flow rate is not within 5 percent of target flow any time the flow rate is measured, reset pump and measure flow rate again until target flow rate is achieved.

**4.2 Test Sampling.** Two and one half hydraulic residence times after the system has reached the targeted specifications shall be permitted to elapse before the first sample is taken. Effluent samples of the clarifier discharge (Item 20 in Figure 1) and the influent wastewater feed are collected in 40-mL septum vials to which two drops of 1:10 hydrochloric acid (HCl) in water have been added. Sample the clarifier discharge directly from the drain line. These samples will be composed of the entire flow from the system for a period of several minutes. Feed samples shall be taken from the feed pump suction line after temporarily stopping the reactor feed, removing a connector, and squeezing the collapsible feed container. Store both influent and effluent samples at 4 °C immediately after collection and analyze within 8 hours of collection.

**4.2.1 Frequency of Sampling.** During the test, sample and analyze the wastewater feed and the clarifier effluent at least six times. The sampling intervals shall be separated by at least 8 hours. During any individual sampling interval, sample the wastewater feed simultaneously with or immediately after the effluent sample. Calculate the relative standard deviation (RSD) of both the influent and effluent sample concentrations. Both RSD values shall be ≤ 15 percent. If an RSD value is > 15 percent, continue sampling and analyzing influent and effluent sets of samples until the RSD values are within specifications.

**4.2.2 Sampling After Exposure of System to Atmosphere.** If, after starting sampling procedures, the bioreactor system is exposed to the atmosphere (due to leaks, maintenance, etc.), allow at least one hydraulic residence time to elapse before resuming sampling.

### 5. Operational Checks and Calibration

**5.1 Dissolved Oxygen.** Fluctuation in dissolved oxygen concentration may occur for numerous reasons, including undetected gas leaks, increases and decreases in mixed liquor suspended solids resulting from cell growth and solids loss in the effluent stream, changes in diffuser performance, cycling of effluent flow rate, and overcorrection due to faulty or sluggish dissolved oxygen probe response. Control the dissolved oxygen concentration in the reactor by changing the

proportion of oxygen in the circulating aeration gas. Should the dissolved oxygen concentration drift below the designated experimental condition, bleed a small amount of aeration gas from the system on the pressure side (i.e., immediately upstream of one of the diffusers). This will create a vacuum in the system, triggering the pressure sensitive relay to open the solenoid valve and admit oxygen to the system. Should the dissolved oxygen concentration drift above the designated experimental condition, stop the oxygen input to the system until the dissolved oxygen concentration approaches the correct level.

5.2 Sludge Wasting. Determine the suspended solids concentration (Section 4.1.4) at the beginning of a test, and once per day thereafter during the test. If the test is completed within a two day period, determine the suspended solids concentration after the final sample set is taken. If the suspended solids concentration exceeds the specified concentration, remove a fraction of the sludge from the reactor. The required volume of mixed liquor to remove is determined as follows:

$$V_w = V_r \left( \frac{S_m - S_s}{S_m} \right) \quad \text{Eq. 304A-2}$$

where

$V_w$  is the wasted volume (Liters),

$V_r$  is the volume of the reactor (6 Liters),

$S_m$  is the measured solids (g/L), and

$S_s$  is the specified solids (g/L).

Remove the mixed liquor from the reactor by loosening a clamp on the mixed liquor sampling tube and allowing the required volume to drain to a graduated flask. Clamp the tube when the correct volume has been wasted. Replace the volume of the liquid wasted by pouring the same volume of effluent back into the bioreactor. Dispose of the waste sludge properly.

5.3 Sludge Makeup. In the event that the suspended solids concentration is lower than the specifications, add makeup sludge back into the bioreactor. Determine the amount of sludge added by the following equation:

$$V_w = V_r \left( \frac{S_s - S_m}{S_w} \right) \quad \text{Eq. 304A-3}$$

where

$V_w$  is the volume of sludge to add (Liters),

$V_r$  is the volume of the reactor (6 Liters),

$S_w$  is the solids in the makeup sludge (g/L),

$S_m$  is the measured solids (g/L), and

$S_s$  is the specified solids (g/L).

5.4 Wastewater Pump Calibration. Determine the wastewater flow rate by collecting the system effluent for a time period of at least one hour, and measuring the volume with a graduated cylinder. Record the collection time period and volume collected. Determine flow rate. Adjust the pump speed to deliver the specified flow rate.

### 6. Calculations

6.1 Nomenclature. The following symbols are used in the calculations.

$C_i$ =Average inlet feed concentration for a compound of interest, as analyzed (mg/L)

$C_o$ =Average outlet (effluent) concentration for a compound of interest, as analyzed (mg/L)

$X$ =Biomass concentration, mixed liquor suspended solids (g/L)

$t$ =Hydraulic residence time in the reactor (hours)

$V$ =Volume of the bioreactor (6L)

$Q$ =Flow rate of wastewater into the reactor, average (L/hour)

6.2 Residence Time. The hydraulic residence time of the reactor is equal to the ratio of the volume of the reactor (L) to the flow rate (L/h)

$$t = \frac{V}{Q} \quad \text{Eq. 304A-4}$$

6.3 Rate of Biodegradation. Calculate the rate of biodegradation for each component with the following equation:

$$\text{Rate} \left( \frac{\text{mg}}{\text{L-h}} \right) = \frac{C_i - C_o}{t} \quad \text{Eq. 304A-5}$$

6.4 First-Order Biorate Constant. Calculate the first-order biorate constant (K1) for each component with the following equation:

$$K1 \left( \frac{\text{L}}{\text{g-h}} \right) = \frac{C_i - C_o}{t C_o X} \quad \text{Eq. 304A-6}$$

6.5 Relative Standard Deviation (RSD). Determine the standard deviation of both the influent and effluent sample concentrations (S) using the following equation:

$$\text{RSD} = \frac{100}{\bar{S}} \left( \sum_{i=1}^n \frac{(S_i - \bar{S})^2}{(n-1)} \right)^{1/2} \quad \text{Eq. 304A-7}$$

6.6 Determination of Percent Air Emissions and Percent Biodegraded. Use the results from this test method and follow the applicable procedures in Appendix C of 40 CFR part 63, entitled, "Determination of the

Fraction Biodegraded ( $F_{\text{bio}}$ ) in a Biological Treatment Unit" to determine  $F_{\text{bio}}$ .

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#### METHOD 304B: DETERMINATION OF BIODEGRADATION RATES OF ORGANIC COMPOUNDS (SCRUBBER OPTION)

##### 1. Applicability and Principle

1.1 Applicability. This method is applicable for the determination of biodegradation rates of organic compounds in an activated sludge process. The test method is designed to evaluate the ability of an aerobic biological reaction system to degrade or destroy specific components in waste streams. The method may also be used to determine the effects of changes in wastewater composition on operation. The biodegradation rates determined by utilizing this method are not

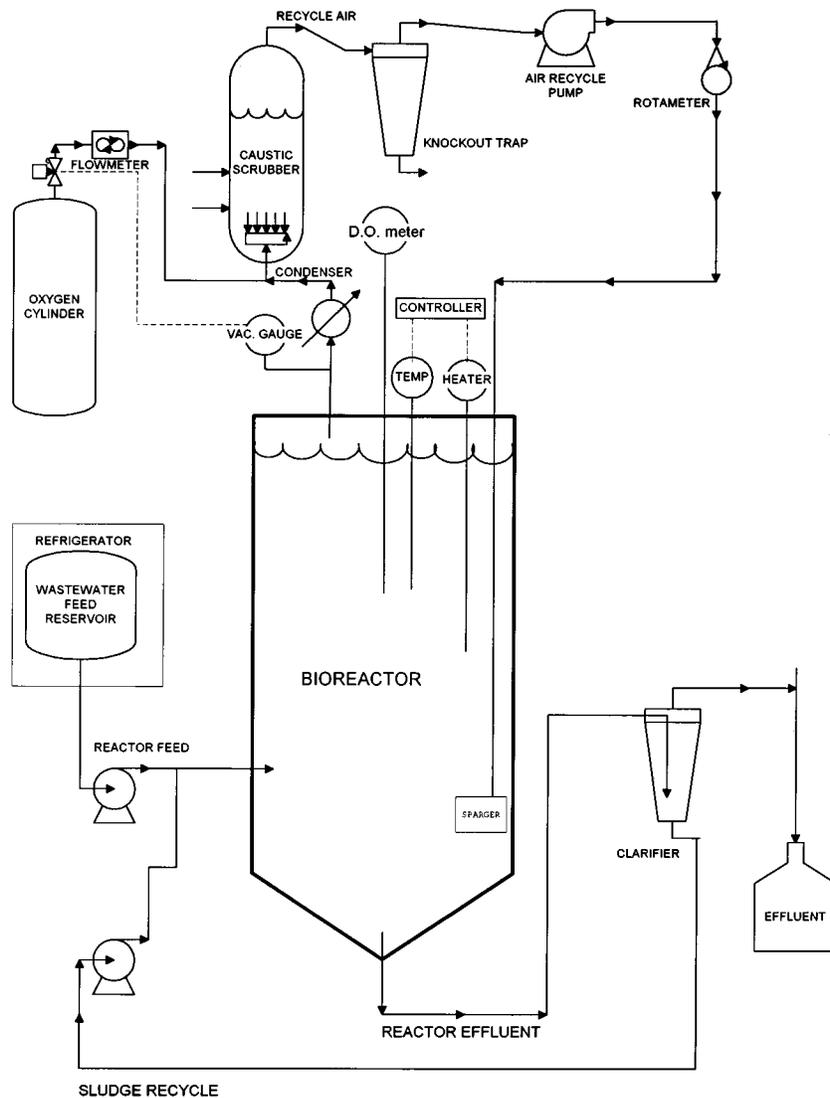
representative of a full-scale system. Full-scale systems embody biodegradation and air emissions in competing reactions. This method measures biodegradation in absence of air emissions. The rates measured by this method shall be used in conjunction with the procedures listed in appendix C of this part to calculate the fraction emitted to the air versus the fraction biodegraded.

1.2 Principle. A self-contained benchtop bioreactor system is assembled in the laboratory. A sample of mixed liquor is added and the waste stream is then fed continuously. The bioreactor is operated under conditions identical to the target full-scale activated sludge process, except that air emissions are not a factor. Bioreactor temperature, dissolved oxygen concentration, average residence time in the reactor, waste composition, biomass concentration, and biomass composition of the full-scale process are the parameters which are duplicated in the laboratory system. If antifoaming agents are used in the full-scale system, they shall also be used in the bioreactor. The feed flowing into the reactor and the effluent exiting the reactor are analyzed to determine the biodegradation rates of the target compounds. The choice of analytical methodology for measuring the compounds of interest at the inlet and outlet to the reactor are left to the discretion of the source, except where validated methods are available.

##### 2. Apparatus

Figure 1 illustrates the typical laboratory apparatus used to measure biodegradation rates. Throughout the testing period, ensure that the bioreactor system is self-contained and isolated from the atmosphere by leak-checking fittings, tubing, etc.

## EPA METHOD 304B BIOREACTOR SYSTEM



## 2.1 Laboratory apparatus.

2.1.1 Reactor. The biological reaction is conducted in a conical 6-L glass biological oxidation reactor. The reactor is sealed and equipped with internal probes to control and monitor dissolved oxygen and internal temperature. The top of the reactor is tapped for aerators, gas flow ports, and instrumenta-

tion (while ensuring that no leaks to the atmosphere exist around the fittings).

2.1.2 Aeration gas. Aeration gas is added to the reactor through three diffusers, which are glass tubes (4 mm O.D.) that extend to the bottom fifth of the reactor depth. A pure oxygen pressurized cylinder is recommended in order to maintain the specified oxygen

concentration. Install a blower (Diaphragm Type, 15 SCFH capacity) to blow the aeration gas into the reactor diffusers. Measure the aeration gas flow rate with a rotameter (0-15 SCFH recommended). The aeration gas will rise through the reactor, dissolving oxygen into the mixture in the process. The aeration gas must provide sufficient agitation to keep the solids in suspension. Provide an exit for the aeration gas from the top flange of the reactor through a water-cooled Allihn-type condenser. Install the condenser through a gas-tight fitting in the reactor closure. Design the system so that at least 10 percent of the gas flows through an alkaline scrubber containing 175 mL of 45 percent by weight solution of potassium hydroxide (KOH) and 5 drops of 0.2 percent alizarin yellow dye. Route the balance of the gas through an adjustable scrubber bypass. Route all of the gas through a 1-L knock-out flask to remove entrained moisture and then to the intake of the blower. The blower recirculates the gas to the reactor.

**2.1.3 Wastewater Feed.** Supply the wastewater feed to the reactor in a 20-L collapsible low-density polyethylene container equipped with a spigot cap (collapsible containers of other material may be required due to the permeability of some volatile compounds through polyethylene). Obtain the wastewater feed by sampling the wastewater feed in the target process. A representative sample of wastewater shall be obtained from the piping leading to the aeration tank. This sample may be obtained from existing sampling valves at the discharge of the wastewater feed pump, or collected from a pipe discharging to the aeration tank, or by pumping from a well-mixed equalization tank upstream from the aeration tank. Alternatively, wastewater can be pumped continuously to the laboratory apparatus from a bleed stream taken from the equalization tank of the full-scale treatment system.

**2.1.3.1 Refrigeration System.** Keep the wastewater feed cool by ice or by refrigeration to 4 °C. If using a bleed stream from the process, refrigeration is not required if the residence time in the bleed stream is less than five minutes.

**2.1.3.2 Wastewater Feed Pump.** The wastewater is pumped from the refrigerated container using a variable-speed peristaltic pump drive equipped with a peristaltic pump head. Add the feed solution to the reactor through a fitting on the top flange. Determine the rate of feed addition to provide a retention time in the bioreactor that is numerically equivalent to the retention time in the full-scale system. The wastewater shall be fed at a rate sufficient to achieve 90 to 100 percent of the full-scale system residence time.

**2.1.3.3 Treated wastewater feed.** The reactor effluent exits at the bottom of the reac-

tor through a tube and proceeds to the clarifier.

**2.1.4 Clarifier.** The effluent flows to a clarifier constructed from a 2-liter pear-shaped glass separatory funnel, modified by removing the stopcock and adding a 25-mm OD glass tube at the bottom. Reactor effluent enters the clarifier through a tube inserted to a depth of 0.08 m (3 in.) through a stopper at the top of the clarifier. System effluent flows from a tube inserted through the stopper at the top of the clarifier to a drain (or sample bottle when sampling). The underflow from the clarifier leaves from the glass tube at the bottom of the clarifier through an o-ring fitting and a reducer. Flexible tubing connects this fitting to the sludge recycle pump. This pump is coupled to a variable speed pump drive. The discharge from this pump is returned through a tube inserted in a port on the side of the reactor. An additional port is provided near the bottom of the reactor for sampling the reactor contents. The mixed liquor from the reactor flows into the center of the clarifier. The clarified system effluent separates from the biomass and flows through an exit near the top of the clarifier. There shall be no headspace in the clarifier. **Optional Clarifier Design:** An internal clarifier may be used instead of the external clarifier described here as long as the biomass concentration is maintained to method specifications.

**2.1.5 Temperature Control Apparatus.** Capable of maintaining the system at a temperature equal to the temperature of the full-scale system,  $\pm 2$  °C.

**2.1.5.1 Temperature Monitoring Device.** A resistance type temperature probe or a thermocouple connected to a temperature readout with a resolution of 0.1 °C.

**2.1.5.2 Reactor Heater.** The heater is connected to the temperature control device.

**2.1.6 Oxygen Control System.** Maintain the dissolved oxygen concentration at the levels present in the full-scale system,  $\pm 0.5$  mg/L.

**2.1.6.1 Dissolved Oxygen Monitor.** Dissolved oxygen is monitored with a polarographic probe (gas permeable membrane) connected to a dissolved oxygen meter (0 to 15 mg/L, 0 to 50 °C).

**2.1.6.2 Reactor Pressure Monitor.** The reactor pressure is monitored through a port in the top flange of the reactor. This is connected to a gauge control with a span of 13-cm water vacuum to 13-cm water pressure. A relay is activated when the vacuum exceeds an adjustable setpoint which opens a solenoid valve (normally closed), admitting oxygen to the system. The vacuum setpoint controlling oxygen addition to the system shall be set at approximately  $2.5 \pm 0.5$  cm water and maintained at this setting except during brief periods when the dissolved oxygen concentration is adjusted.

2.1.7 Connecting Tubing. All connecting tubing shall be Teflon or equivalent in impermeability. The only exception to this specification is the tubing directly inside the pump head of the wastewater feed pump, which may be Viton, Silicone or another type of flexible tubing.

2.2 Analysis. If the identity of the compounds of interest in the wastewater is not known to the source, a representative sample of the wastewater shall be analyzed in order to identify all of the compounds of interest present. A gas chromatography/mass spectrometry screening method is recommended.

2.2.1 After identifying the compounds of interest in the wastewater, develop an analytical technique capable of measuring all of those compounds (more than one analytical technique may be required, depending on the characteristics of the wastewater). Test Method 18, found in Appendix A of 40 CFR part 60, may be used as a guideline in developing the analytical technique. Purge and trap techniques may be used for analysis providing the target components are sufficiently volatile as to make this technique appropriate. The limit of quantitation for each compound shall be determined<sup>1</sup>. If the effluent concentration of any target compound is below the limit of quantitation determined for that compound, use the limit of quantitation concentration as the outlet concentration for that compound in the biodegradation calculations.

2.2.2 Calibration Standards. Prepare calibration standards from pure certified standards in an aqueous medium. Prepare and analyze three concentrations of calibration standards for each target component (or for a mixture of components) in triplicate daily throughout the analyses of the test samples. At each concentration level, a single calibration shall be within 5 percent of the average of the three calibration results. The low and medium calibration standards shall bracket the expected concentration of the effluent (treated) wastewater. The medium and high standards shall bracket the expected influent concentration.

2.3 Audit Analysis. Analyze a performance audit sample during every compliance test, if an audit sample is available. Audit availability information may be obtained by contacting the Emission Measurement Technical Information Center at (919) 541-2237. Use the same analytical equipment and analyst used in conducting the compliance test to conduct the audit analysis.

### 3. Reagents

3.1 Wastewater. Obtain a representative sample of wastewater at the inlet to the full-scale treatment plant if there is an existing full-scale treatment plant (See Section 2.1.3). If there is no existing full-scale treatment plant, obtain the wastewater sample as close

to the point of generation as possible. Collect the sample by pumping the wastewater into the 20-L collapsible container. The loss of volatiles shall be minimized from the wastewater by collapsing the container before filling, by minimizing the time of filling, and by avoiding a headspace in the container after filling. If the wastewater requires the addition of nutrients to support the biomass growth and maintain biomass characteristics, those nutrients are added and mixed with the container contents after the container is filled.

3.2 Biomass. Obtain the biomass or activated sludge used for rate constant determination in the bench-scale process from the existing full-scale process or from a representative biomass culture that has been developed for a future full-scale process. This biomass is preferentially obtained from a thickened acclimated mixed liquor sample. Collect the sample either by bailing from the mixed liquor in the aeration tank with a weighted container, or by collecting aeration tank effluent at the effluent overflow weir. Transport the sample to the laboratory within 12 hours of collection. Maintain the biomass concentration in the reactor at the level of the full-scale system  $\pm 10$  percent throughout the sampling period of the test method.

### 4. Procedure

SAFETY NOTE: If explosive gases are produced as a byproduct of biodegradation, closely monitor headspace concentration of these gases to ensure laboratory safety. Placement of bioreactor system inside a laboratory hood is recommended regardless of byproducts produced.

4.1 Reactor Operation. Charge the mixed liquor to the reactor, minimizing headspace over the liquid surface to minimize entrainment of mixed liquor in the circulating gas. Fasten the reactor headplate to the reactor over the liquid surface. Maintain the temperature of the contents of the laboratory reactor system at the temperature of the full-scale system,  $\pm 2$  °C, throughout the testing period. Monitor and record the temperature of the reactor contents to the nearest 0.1 °C.

4.1.1 Wastewater Storage. Collect the wastewater sample in the 20-L collapsible container. Store the container at 4 °C throughout the testing period. Connect the container to the reactor feed pump.

4.1.2 Wastewater Flow Rate. The hydraulic residence time of the aeration tank is calculated as the ratio of the volume of the tank (L) to the flow rate (L/min). At the beginning of a test the container shall be connected to the feed pump and solution pumped to the reactor at the required flow rate to achieve the calculated hydraulic residence time of the aeration tank.

$$Q_{\text{test}} = Q_{\text{fs}} \frac{L}{V_{\text{fs}}} \quad \text{Eq. 304B-1}$$

where  $Q_{\text{test}}$ =wastewater flow rate (L/min)

$Q_{\text{fs}}$ =average flow rate of full-scale process (L/min)

$V_{\text{fs}}$ =volume of full-scale aeration tank (L)

The flow rate in the test apparatus is the same as the flow rate in the full-scale process multiplied by the ratio of bioreactor volume (6 L) to the volume of the full-scale aeration tank. The hydraulic residence time shall be maintained at 90 to 100 percent of the residence time maintained in the full-scale unit. A nominal flow rate is set on the pump based on a pump calibration. Changes in the elasticity of the tubing in the pump head and the accumulation of material in the tubing affect this calibration. The nominal pumping rate shall be changed as necessary based on volumetric flow measurements. Discharge the reactor effluent to a wastewater storage, treatment, or disposal facility, except during sampling or flow measurement periods.

**4.1.3 Sludge Recycle Rate.** Set the sludge recycle rate at a rate sufficient to prevent accumulation in the bottom of the clarifier. Set the air circulation rate sufficient to maintain the biomass in suspension.

**4.1.4 Bioreactor Operation and Maintenance.** Temperature, dissolved oxygen concentration, flow rate, and air circulation rate shall be measured and recorded three times throughout each day of testing. If other parameters (such as pH) are measured and maintained in the full-scale unit, these parameters shall be monitored and maintained to full-scale specifications in the bioreactor. At the beginning of each sampling period (Section 4.2), sample the reactor contents for suspended solids analysis. Take this sample by loosening a clamp on a length of tubing attached to the lower side port. Determine the suspended solids determination gravimetrically by the Gooch crucible/glass fiber filter method for total suspended solids, in accordance with Standard Methods<sup>3</sup> or equivalent. When necessary, sludge shall be wasted from the lower side port of the reactor, and the volume that is wasted shall be replaced with an equal volume of the reactor effluent. Add thickened activated sludge mixed liquor as necessary to the reactor to increase the suspended solids concentration to the desired level. Pump this mixed liquor to the reactor through the upper side port (Item 24 in Figure 1). Change the membrane on the dissolved oxygen probe before starting the test. Calibrate the oxygen probe immediately before the start of the test and each time the membrane is changed. The scrubber solution shall be replaced each weekday with 175 mL 45 percent W/W KOH solution to which five drops of 0.2 percent alizarin yellow

indicator in water have been added. The potassium hydroxide solution in the alkaline scrubber shall be changed if the alizarin yellow dye color changes.

**4.1.5 Inspection and Correction Procedures.** If the feed line tubing becomes clogged, replace with new tubing. If the feed flow rate is not within 5 percent of target flow any time the flow rate is measured, reset pump and measure flow rate again until target flow rate is achieved.

**4.2 Test Sampling.** Two and one half hydraulic residence times after the system has reached the targeted specifications shall be permitted to elapse before the first sample is taken. Effluent samples of the clarifier discharge (Item 20 in Figure 1) and the influent wastewater feed are collected in 40-mL septum vials to which two drops of 1:10 hydrochloric acid (HCl) in water have been added. Sample the clarifier discharge directly from the drain line. These samples will be composed of the entire flow from the system for a period of several minutes. Feed samples shall be taken from the feed pump suction line after temporarily stopping the reactor feed, removing a connector, and squeezing the collapsible feed container. Store both influent and effluent samples at 4°C immediately after collection and analyze within 8 hours of collection.

**4.2.1 Frequency of Sampling.** During the test, sample and analyze the wastewater feed and the clarifier effluent at least six times. The sampling intervals shall be separated by at least 8 hours. During any individual sampling interval, sample the wastewater feed simultaneously with or immediately after the effluent sample. Calculate the relative standard deviation (RSD) of both the influent and effluent sample concentrations. Both RSD values shall be ≤ 15 percent. If an RSD value is > 15 percent, continue sampling and analyzing influent and effluent sets of samples until the RSD values are within specifications.

**4.2.2 Sampling After Exposure of System to Atmosphere.** If, after starting sampling procedures, the bioreactor system is exposed to the atmosphere (due to leaks, maintenance, etc.), allow at least one hydraulic residence time to elapse before resuming sampling.

### 5. Operational Checks and Calibration

**5.1 Dissolved Oxygen.** Fluctuation in dissolved oxygen concentration may occur for numerous reasons, including undetected gas leaks, increases and decreases in mixed liquor suspended solids resulting from cell growth and solids loss in the effluent stream, changes in diffuser performance, cycling of effluent flow rate, and overcorrection due to faulty or sluggish dissolved oxygen probe response. Control the dissolved oxygen concentration in the reactor by changing the

proportion of oxygen in the circulating aeration gas. Should the dissolved oxygen concentration drift below the designated experimental condition, bleed a small amount of aeration gas from the system on the pressure side (i.e. immediately upstream of one of the diffusers). This will create a vacuum in the system, triggering the pressure sensitive relay to open the solenoid valve and admit oxygen to the system. Should the dissolved oxygen concentration drift above the designated experimental condition, stop the oxygen input to the system until the dissolved oxygen concentration approaches the correct level.

5.2 Sludge Wasting. Determine the suspended solids concentration (Section 4.1.4) at the beginning of a test, and once per day thereafter during the test. If the test is completed within a two day period, determine the suspended solids concentration after the final sample set is taken. If the suspended solids concentration exceeds the specified concentration, remove a fraction of the sludge from the reactor. The required volume of mixed liquor to remove is determined as follows:

$$V_w = V_r \left( \frac{S_m - S_s}{S_m} \right) \quad \text{Eq. 304B-2}$$

where  $V_w$  is the wasted volume (Liters),  $V_r$  is the volume of the reactor (6 Liters),  $S_m$  is the measured solids (g/L), and  $S_s$  is the specified solids (g/L).

Remove the mixed liquor from the reactor by loosening a clamp on the mixed liquor sampling tube and allowing the required volume to drain to a graduated flask. Clamp the tube when the correct volume has been wasted. Replace the volume of the liquid wasted by pouring the same volume of effluent back into the bioreactor. Dispose of the waste sludge properly.

5.3 Sludge Makeup. In the event that the suspended solids concentration is lower than the specifications, add makeup sludge back into the bioreactor. Determine the amount of sludge added by the following equation:

$$V_w = V_r \left( \frac{S_s - S_m}{S_w} \right) \quad \text{Eq. 304B-3}$$

where  $V_w$  is the volume of sludge to add (Liters),  $V_r$  is the volume of the reactor (6 Liters),  $S_w$  is the solids in the makeup sludge (g/L),  $S_m$  is the measured solids (g/L), and  $S_s$  is the specified solids (g/L).

5.4 Wastewater Pump Calibration. Determine the wastewater flow rate by collecting the system effluent for a time period of at least one hour, and measuring the volume

with a graduated cylinder. Record the collection time period and volume collected. Determine flow rate. Adjust the pump speed to deliver the specified flow rate.

### 6. Calculations

6.1 Nomenclature. The following symbols are used in the calculations.

$C_i$ =Average inlet feed concentration for a compound of interest, as analyzed (mg/L)

$C_o$ =Average outlet (effluent) concentration for a compound of interest, as analyzed (mg/L)

$X$ =Biomass concentration, mixed liquor suspended solids (g/L)

$t$ =Hydraulic residence time in the reactor (hours)

$V$ =Volume of the bioreactor (6L)

$Q$ =Flow rate of wastewater into the reactor, average (L/hour)

6.2 Residence Time. The hydraulic residence time of the reactor is equal to the ratio of the volume of the reactor (L) to the flow rate (L/h)

$$t = \frac{V}{Q} \quad \text{Eq. 304B-4}$$

6.3 Rate of Biodegradation. Calculate the rate of biodegradation for each component with the following equation:

$$\text{Rate} \left( \frac{\text{mg}}{\text{L-h}} \right) = \frac{C_i - C_o}{t} \quad \text{Eq. 304B-5}$$

6.4 First-Order Biorate Constant. Calculate the first-order biorate constant (K1) for each component with the following equation:

$$K1 \left( \frac{\text{L}}{\text{g-h}} \right) = \frac{C_i - C_o}{t C_o X} \quad \text{Eq. 304B-6}$$

6.5 Relative Standard Deviation (RSD). Determine the standard deviation of both the influent and effluent sample concentrations (S) using the following equation:

$$\text{RSD} = \frac{100}{\bar{S}} \left( \sum_{i=1}^n \frac{(S_i - \bar{S})^2}{(n-1)} \right)^{1/2} \quad \text{Eq. 304B-7}$$

6.6 Determination of Percent Air Emissions and Percent Biodegraded. Use the results from this test method and follow the applicable procedures in appendix C of 40 CFR part 63, entitled, "Determination of the Fraction Biodegraded ( $F_{\text{bio}}$ ) in a Biological Treatment Unit" to determine  $F_{\text{bio}}$ .

### 7. Bibliography

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4. Water7, Hazardous Waste Treatment, Storage, and Disposal Facilities (TSDF)—Air Emission Models, U.S. Environmental Protection Agency, EPA-450/3-87-026, Review Draft, November 1989.
5. Chemdat7, Hazardous Waste Treatment, Storage, and Disposal Facilities (TSDF)—Air Emission Models, U.S. Environmental Protection Agency, EPA-450/3-87-026, Review Draft, November 1989.

### METHOD 305: MEASUREMENT OF EMISSION POTENTIAL OF INDIVIDUAL VOLATILE ORGANIC COMPOUNDS IN WASTE

#### 1. Applicability and Principle

This procedure is used to determine the emission potential of individual volatile organics (VOs) in waste. The heated purge conditions established by Method 25D (40 CFR part 60, Appendix A) are used to remove VOs from a 10-g sample of waste suspended in a 50/50 solution of polyethylene glycol (PEG) and water. The purged VOs are quantified by using the sample collection and analytical techniques appropriate for the VOs present in the waste. The recovery efficiency of the sample collection and analytical technique is determined for each waste matrix. A correction factor is determined for each compound (if acceptable recovery criteria requirements are met of 70 to 130 percent re-

covery for every target compound), and the measured waste concentration is corrected with the correction factor for each compound. A minimum of three replicate waste samples shall be analyzed.

#### 2. Apparatus and Materials

##### 2.1 Method 25D Purge Apparatus.

2.1.1 Purge Chamber. The purge chamber shall accommodate the 10-g sample of waste suspended in a matrix of 50 mL of PEG and 50 mL of deionized, hydrocarbon-free water. Three fittings are used on the glass chamber top. Two #7 Ace-threads are used for the purge gas inlet and outlet connections. A #50 Ace-thread is used to connect the top of the chamber to the base (see Figure 1). The base of the chamber has a side-arm equipped with a #22 Sovirel fitting to allow for easy sample introductions into the chamber. The dimensions of the chamber are shown in Figure 1.

2.1.2 Flow Distribution Device (FDD). The FDD enhances the gas-to-liquid contact for improved purging efficiency. The FDD is a 6 mm OD by 30 cm long glass tube equipped with four arm bubblers as shown in Figure 1. Each arm shall have an opening of 1 mm in diameter.

2.1.3 Coalescing Filter. The coalescing filter serves to discourage aerosol formation of sample gas once it leaves the purge chamber. The glass filter has a fritted disc mounted 10 cm from the bottom. Two #7 Ace-threads are used for the inlet and outlet connections. The dimensions of the chamber are shown in Figure 2.

2.1.4 Oven. A forced convection airflow oven capable of maintaining the purge chamber and coalescing filter at  $75 \pm 2^\circ\text{C}$ .

2.1.5 Toggle Valve. An on/off valve constructed from brass or stainless steel rated to 100 psig. This valve is placed in line between the purge nitrogen source and the flow controller.

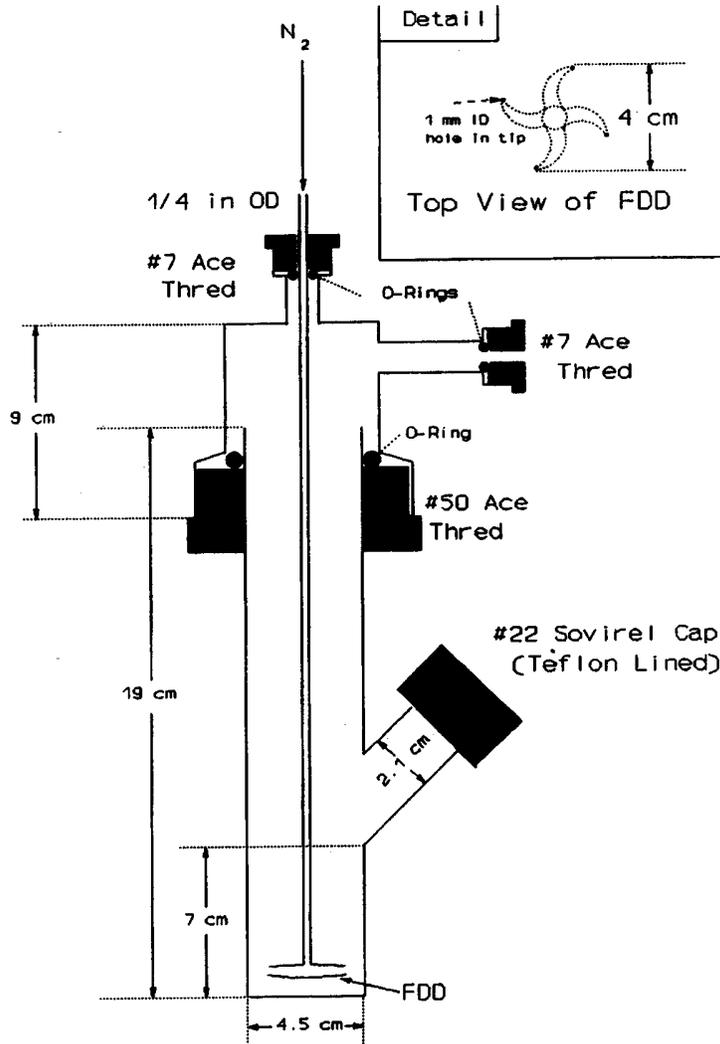


Figure 1. Schematic of Purge Chamber

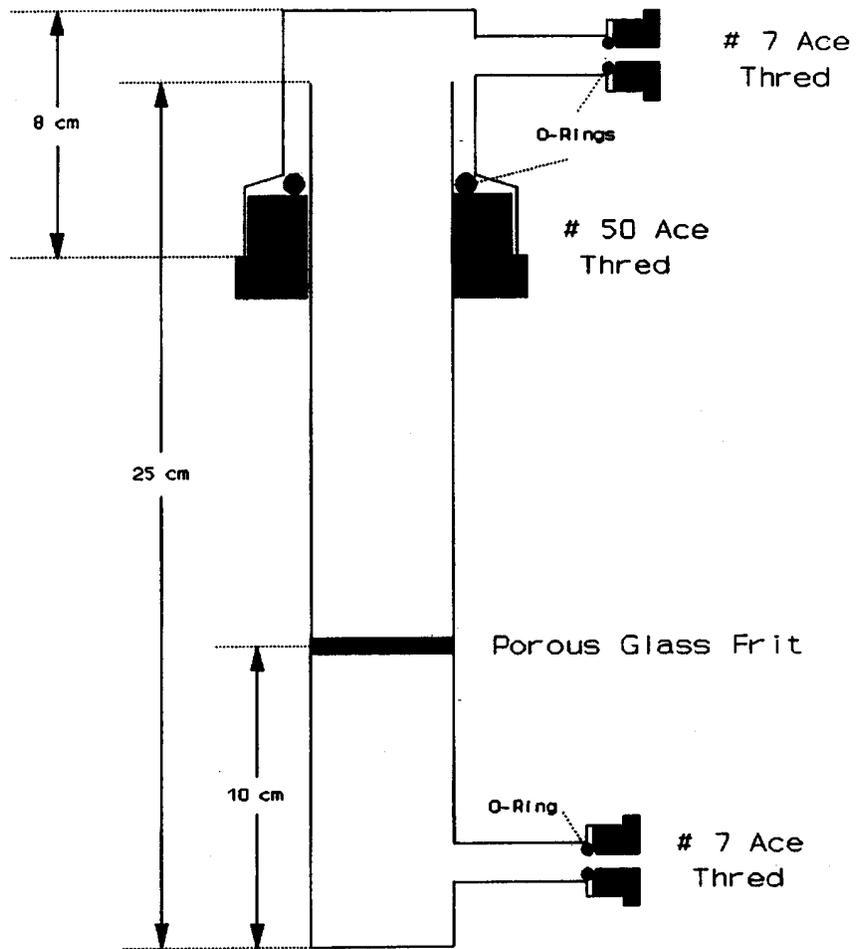


Figure 2. Schematic of Coalescing Filter

2.1.6 Flow Controller. High-quality stainless steel flow controller capable of restricting a flow of nitrogen to  $6\pm 0.06$  L/min at 40 psig.

2.1.7 Polyethylene Glycol Cleaning System.

2.1.7.1 Round-Bottom Flask. One liter, three-neck glass round-bottom flask for cleaning PEG. Standard taper 24/40 joints are mounted on each neck.

2.1.7.2 Heating Mantle. Capable of heating contents of the 1-L flask to  $120^{\circ}\text{C}$ .

2.1.7.3 Nitrogen Bubbler. Teflon or glass tube, 0.25 in. OD.

2.1.7.4 Thermometer. Partial immersion glass thermometer.

2.1.7.5 Hose Adapter. Glass with 24/40 standard tapered joint.

2.1.8 Reagents.

2.1.8.1 Polyethylene Glycol. Ninety-eight percent pure organic polymer with an average molecular weight of 400. Volatile organics are removed from the PEG prior to use by heating to  $120\pm 5^{\circ}\text{C}$  and purging with pure nitrogen at 1 L/min for 2 hours. The PEG is stored at room temperature under a nitrogen purge maintained at 1 L/min until used. A typical apparatus used to clean the PEG is shown in Figure 3.

2.1.8.2 Water. Organic-free deionized water is required.

2.1.8.3 Nitrogen. High-purity nitrogen (less than 0.5 ppm total hydrocarbons) is used to remove test compounds from the purge matrix. The source of nitrogen shall be

regulated continuously to 40 psig before the on/off toggle valve.

2.2 Volatile Organic Recovery System.

2.2.1 Splitter Valve (Optional). Stainless steel cross-pattern valve capable of splitting nominal flow rates from the purge flow of 6 L/min. The valve shall be maintained at  $75\pm 2^{\circ}\text{C}$  in the heated zone and shall be placed downstream of the coalescing filter. It is recommended that 0.125 in. OD tubing be used to direct the split vent flow from the heated zone. The back pressure caused by the 0.125 in. OD tubing is critical for maintaining proper split valve operation. Note: The splitter valve design is optional; it may be used in cases where the concentration of a pollutant would saturate the adsorbents.

2.2.2 Injection Port. Stainless steel 1/4 in. OD compression fitting tee with a 6-mm septum fixed on the top port. The injection port is the point of entry for the recovery study solution. If using a gaseous standard to determine recovery efficiency, connect the gaseous standard to the injection port of the tee.

2.2.3 Knockout Trap (Optional but Recommended). A 25-mL capacity glass reservoir body with a full-stem impinger (to avoid leaks, a modified midget glass impinger with a screw cap and ball/socket clamps on the inlet and outlet is recommended). The empty impinger is placed in an ice water bath between the injection port and the sorbent cartridge. Its purpose is to reduce the water content of the purge gas (saturated at  $75^{\circ}\text{C}$ ) before the sorbent cartridge.

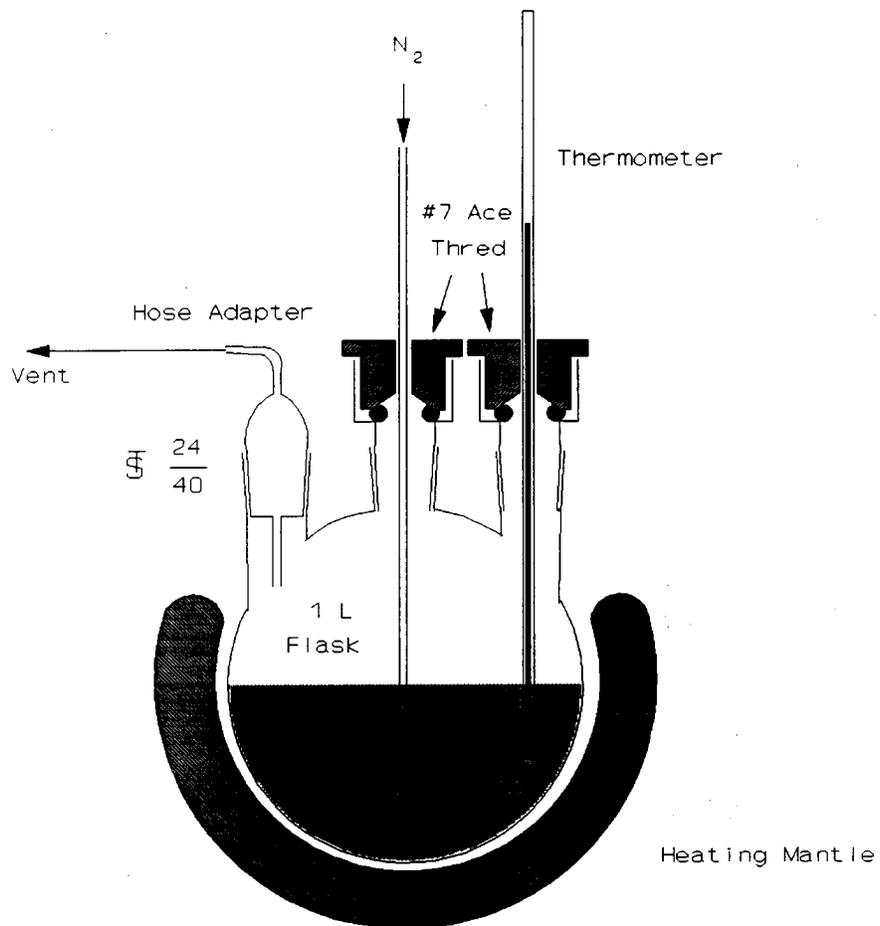


FIGURE 3. SCHEMATIC OF PEG CLEANING SYSTEM

2.2.4 Insulated Ice Bath. A 350-mL dewar or other type of insulated bath is used to maintain ice water around the knockout trap.

2.2.5 Sorbent Cartridges. Commercially available glass or stainless steel cartridge packed with one or more appropriate sorbents. The amount of adsorbent packed in the cartridge depends on the breakthrough volume of the test compounds but is limited by back pressure caused by the packing (not to exceed 7 psig). More than one sorbent cartridge placed in series may be necessary depending upon the mixture of the measured components.

2.2.6 Volumetric Glassware. Type A glass 10-mL volumetric flasks for measuring a final volume from the water catch in the knockout trap.

2.2.7 Thermal Desorption Unit. A clam-shell type oven, used for the desorption of direct thermal desorption sorbent tubes. The oven shall be capable of increasing the temperature of the desorption tubes rapidly to recommended desorption temperature.

2.2.8 Ultrasonic Bath. Small bath used to agitate sorbent material and desorption solvent. Ice water shall be used in the bath because of heat transfer caused by operation of the bath.

2.2.9 Desorption Vials. Four-dram (15-mL) capacity borosilicate glass vials with Teflon-lined caps.

2.2.10 Reagents.

2.2.10.1 Water. Same as specified in Section 2.1.8.2.

2.2.10.2 Desorption Solvent (when used). Appropriate high-purity (99.99 percent) solvent for desorption shall be used. Analysis shall be performed (utilizing the same analytical technique as that used in the analysis of the waste samples) on each lot to determine purity.

2.3 Analytical System. A gas chromatograph (GC) is commonly used to sepa-

rate and quantify compounds from the sample collection and recovery procedure. Method 18 (40 CFR part 60, appendix A) may be used as a guideline for determining the appropriate GC column and GC detector based on the test compounds to be determined. Other types of analytical instrumentation may be used (i.e., HPLC) in lieu of GC systems as long as the recovery efficiency criteria of this method are met.

2.3.1 Gas Chromatograph. The GC shall be equipped with a constant-temperature liquid injection port or a heated sampling loop/valve system, as appropriate. The GC oven shall be temperature-programmable over the useful range of the GC column. The choice of detectors is based on the test compounds to be determined.

2.3.2 GC Column. Select the appropriate GC column based on (1) literature review or previous experience, (2) polarity of the analytes, (3) capacity of the column, or (4) resolving power (i.e., length, diameter, film thickness) required.

2.3.3 Data System. A programmable electronic integrator for recording, analyzing, and storing the signal generated by the detector.

2.3.4 Reagents. The gases required for GC operation shall be of the highest obtainable purity (hydrocarbon free). Consult the operating manual for recommended settings.

### 3. Procedure

Assemble the glassware and associated fittings (see Figures 4 or 5, as appropriate) and leak-check the system (approximately 7 psig is the target pressure). After an initial leak check, mark the pressure gauge and use the initial checkpoint to monitor for leaks throughout subsequent analyses. If the pressure in the system drops below the target pressure at any time during analysis, that analysis shall be considered invalid.

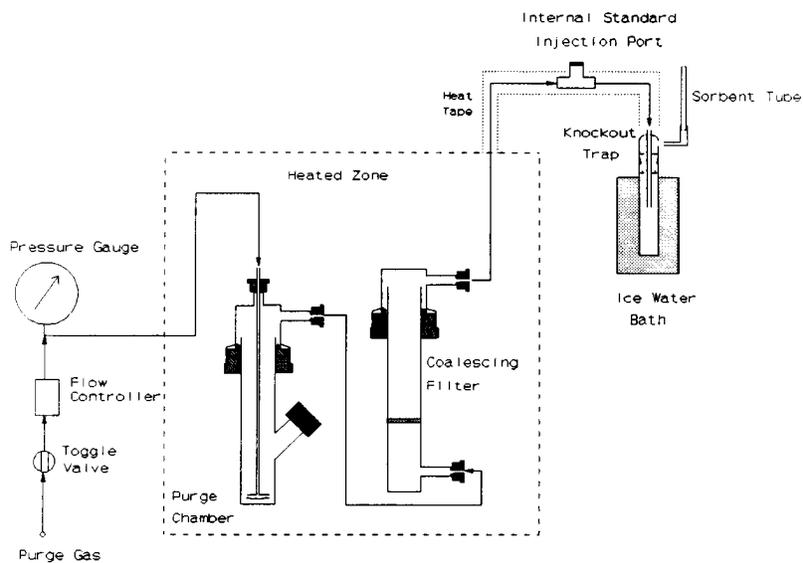


FIGURE 4. SCHEMATIC OF PURGE AND RECOVERY APPARATUS

3.1 Recovery Efficiency Determination. Determine the individual recovery efficiency (RE) for each of the target compounds in duplicate before the waste samples are analyzed. To determine the RE, generate a water blank (Section 3.2.4) and use the injection port to introduce a known volume of spike solution (or certified gaseous standard) containing all of the target compounds at the levels expected in the waste sample. Introduce the spike solution immediately after the nitrogen purge has been started (Section 3.2.2). Follow the procedures outlined in Section 3.2.3. Analyze the recovery efficiency samples using the techniques described in Section 3.3. Determine the recovery efficiency (Equation 1, Section 4.2) by comparing the amount of compound recovered to the theoretical amount spiked. Determine the RE twice for each compound; the RSD shall be  $\leq 10$  percent for each compound. If the RSD for any compound is not  $\leq 10$  percent, modify the sampling/analytical procedure and complete an RE study in duplicate, or continue determining RE until the RSD meets the acceptable criteria. The average RE shall be  $0.70 \leq RE \leq 1.30$  for each compound. If the average RE does not meet these criteria, an alternative sample collection and/or analysis technique shall be developed and the recovery efficiency determination shall be repeated for that compound until the criteria are met for every target compound. Example modifications of the sampling/analytical system include changing the adsorbent material, changing the desorption solvent, utilizing direct thermal desorption of test compounds from the sorbent tubes, utilizing another analytical technique.

### 3.2 Sample Collection and Recovery.

3.2.1 The sample collection procedure in Method 25D shall be used to collect (into a preweighed vial) 10 g of waste into PEG, cool, and ship to the laboratory. Remove the sample container from the cooler and wipe the exterior to remove any ice or water. Weigh the container and sample to the nearest 0.01 g and record the weight. Pour the sample from the container into the purge flask. Rinse the sample container three times with approximately 6 mL of PEG (or the volume needed to total 50 mL of PEG in the purge flask), transferring the rinses to the purge flask. Add 50 mL of organic-free deionized water to the purge flask. Cap the purge flask tightly in between each rinse and after adding all the components into the flask.

3.2.2 Allow the oven to equilibrate to  $75 \pm 0.5$  °C. Begin the sample recovery process by turning the toggle valve on, thus allowing a 6-L/min flow of pure nitrogen through the purge chamber.

3.2.3 Stop the purge after 30 min. Immediately remove the sorbent tube(s) from the apparatus and cap both ends. Remove the knockout trap and transfer the water catch

to a 10-mL volumetric flask. Rinse the trap with organic-free deionized water and transfer the rinse to the volumetric flask. Dilute to the 10-mL mark with water. Transfer the water sample to a sample vial and store at 4°C with zero headspace. The analysis of the contents of the water knockout trap is optional for this method. If the target compounds are water soluble, analysis of the water is recommended; meeting the recovery efficiency criteria in these cases would be difficult without adding the amount captured in the knockout trap.

3.2.4 Water Blank. A water blank shall be analyzed daily to determine the cleanliness of the purge and recovery system. A water blank is generated by adding 60 mL of organic-free deionized water to 50 mL of PEG in the purge chamber. Treat the blank as described in Section 3.2.2 and 3.2.3. The purpose of the water blank is to insure that no contaminants exist in the sampling and analytical apparatus which would interfere with the quantitation of the target compounds. If contaminants are present, locate the source of contamination, remove it, and repeat the water blank analysis.

3.3 Sample Analysis. Sample analysis in the context of this method refers to techniques to remove the target compounds from the sorbent tubes, separate them using a chromatography technique, and quantify them with an appropriate detector. Two types of sample extraction techniques typically used for sorbents include solvent desorption or direct thermal desorption of test compounds to a secondary focusing unit (either sorbent or cryogen based). The test compounds are then typically transferred to a GC system for analysis. Other analytical systems may be used (i.e., HPLC) in lieu of GC systems as long as the recovery efficiency criteria of this method are met.

3.3.1 Recover the test compounds from the sorbent tubes that require solvent desorption by transferring the adsorbent material to a sample vial containing the desorption solvent. The desorption solvent shall be the same as the solvent used to prepare calibration standards. The volume of solvent depends on the amount of adsorbed material to be desorbed (1.0 mL per 100 mg of adsorbent material) and also on the amount of test compounds present. Final volume adjustment and or dilution can be made so that the concentration of test compounds in the desorption solvent is bracketed by the concentration of the calibration solutions. Ultrasonicate the desorption solvent for 15 min in an ice bath. Allow the sample to sit for a period of time so that the adsorbent material can settle to the bottom of the vial. Transfer the solvent with a pasteur pipet (minimizing the amount of adsorbent material taken) to another vial and store at 4 °C.

3.3.2 The analytical instrument shall be calibrated with a minimum of three levels of

standards for each compound whose concentrations bracket the concentration of test compounds from the sorbent tubes. Liquid calibration standards shall be used for calibration in the analysis of the solvent extracts. The liquid calibration standards shall be prepared in the desorption solvent matrix. The calibration standards may be prepared and injected individually or as a mixture. If thermal desorption and focusing (onto another sorbent or cryogen focusing) are used, a certified gaseous mixture or a series of gaseous standards shall be used for calibration of the instrument. The gaseous standards shall be focused and analyzed in the same manner as the samples.

3.3.3 The analytical system shall be certified free from contaminants before a calibration is performed (see Section 3.2.4). The calibration standards are used to determine the linearity of the analytical system. Perform an initial calibration and linearity check by analyzing the three calibration standards for each target compound in triplicate starting with the lowest level and continuing to the highest level. If the triplicate analyses do not agree within 5 percent of their average, additional analyses will be needed until the 5 percent criteria is met. Calculate the response factor (Equation 3, Section 4.4) from the average area counts of the injections for each concentration level. Average the response factors of the standards for each compound. The linearity of the detector is acceptable if the response factor of each compound at a particular concentration is within 10 percent of the overall mean response factor for that compound. Analyze daily a mid-level calibration standard in duplicate and calculate a new response factor. Compare the daily response factor average to the average response factor calculated for the mid-level calibration during the initial linearity check; repeat the three-level calibration procedure if the daily average response factor differs from the initial linearity check mid-level response factor by more than 10 percent. Otherwise, proceed with the sample analysis.

3.3.4 Analyze the desorption solvent or direct thermal desorption tubes from each sample using the same analytical parameters used for the calibration standard. Calculate the total weight detected for each compound (Equation 4, Section 4.5). The slope (area/amount) and y-intercept are calculated from the line bracketed between the two closest calibration points. Correct the concentration of each waste sample with the appropriate recovery efficiency factor and the split flow ratio (if used). The final concentration of each individual test compound is calculated by dividing the corrected measured weight for that compound by the weight of the original sample determined in Section 3.2.1 (Equation 5, Section 4.6).

3.4 Repeat the sample collection, recovery, and analysis twice more, for a total of three samples. Report the corrected concentration of each of the waste samples, average waste concentration, and relative standard deviation (Equation 6, Section 4.7).

#### 4. Calculations

##### 4.1 Definitions and Variables

$A_s$ =Mean area counts of test compound in standard.  
 $A_0$ =Mean area counts of test compound in sample desorption solvent.  
 $b$ =y-intercept of the line formed between the two closest calibration standards that bracket the concentration of the sample.  
 $C_T$ =Amount of test compound ( $\mu\text{g}$ ) in calibration standard.  
 $CF$ =Correction for adjusting final amount of sample detected for losses during individual sample runs.  
 $F_p$ =Nitrogen flow through the purge chamber (6 L/min).  
 $F_s$ =Nitrogen split flow directed to the sample recovery system (use 6 L/min if split flow design was not used).  
 $PPM$ =Final concentration of test compound in waste sample ( $\mu\text{g/g}$ ).  
 $RE$ =Recovery efficiency for adjusting final amount of sample detected for losses due to inefficient trapping and desorption techniques.  
 $R.F.$ =Response factor for test compound, calculated from a calibration standard.  
 $S$ =Slope of the line (area counts/ $C_T$ ) formed between two closest calibration points that bracket the concentration of the sample.  
 $W_c$ =Weight of test compound expected to be recovered in spike solution based on theoretical amount.  
 $W_E$ =Weight of vial and PEG (g).  
 $W_F$ =Weight of vial, PEG and waste sample (g).  
 $W_S$ =Weight of original waste sample (g).  
 $W_T$ =Corrected weight of test compound measured ( $\mu\text{g}$ ) in sample.  
 $W_x$ =Weight of test compound measured during analysis of recovery efficiency spike samples ( $\mu\text{g}$ ).

4.2 Recovery efficiency for determining trapping/desorption efficiency of individual test compounds in the spike solution, decimal value.

$$RE = \frac{W_x}{W_c} \quad (1)$$

4.3 Weight of waste sample (g).

$$W_S = W_F - W_E \quad (2)$$

4.4 Response Factor for individual test compounds.

$$RF = \frac{C_T}{A_S} \quad (3)$$

4.5 Corrected weight of a test compound in the sample, in  $\mu\text{g}$ .

$$W_T = \frac{A_u - b}{S} \times \frac{1}{RE} \times \frac{F_p}{F_s} \quad (4)$$

4.6 Final concentration of a test compound in the sample in ppmw.

$$PPM = \frac{W_T}{W_S} \quad (5)$$

4.7 Relative standard deviation (RSD) calculation.

$$RSD = \frac{100}{PPM} \sqrt{\frac{\sum_{i=1}^n (PPM_i - \overline{PPM})^2}{n-1}} \quad (6)$$

#### METHOD 306—DETERMINATION OF CHROMIUM EMISSIONS FROM DECORATIVE AND HARD CHROMIUM ELECTROPLATING AND ANODIZING OPERATIONS

##### 1. Applicability and Principle

1.1 Applicability. This method applies to the determination of chromium (Cr) in emissions from decorative and hard chrome electroplating facilities and anodizing operations.

1.2 Principle. (a) A sample is extracted isokinetically from the source using an unheated Method 5 sampling train (40 CFR part 60, appendix A), with a glass nozzle and probe liner, but with the filter omitted. The sample time has to be at least 2 hours. The Cr emissions are collected in an alkaline solution: 0.1 N sodium hydroxide (NaOH) or 0.1 N sodium bicarbonate ( $\text{NaHCO}_3$ ). The collected samples remain in the alkaline solution until analysis. Samples with high Cr concentrations may be analyzed using inductively coupled plasma emission spectrometry (ICP) at 267.72 nm. Alternatively, if improved detection limits are required, a portion of the alkaline impinger solution is digested with nitric acid and analyzed by graphite furnace atomic absorption spectroscopy (GFAAS) at 357.9 nm.

(b) If it is desirable to determine hexavalent chromium ( $\text{Cr}^{+6}$ ) emissions, the samples may be analyzed using an ion chromatograph equipped with a post-column reactor (IC/PCR) and a visible wavelength detector. To increase sensitivity for trace levels of  $\text{Cr}^{+6}$ , a preconcentration system can be used in conjunction with the IC/PCR.

##### 2. Range, Sensitivity, Precision, and Interferences

2.1 Range. The recommended analytical range for each of the three analytical tech-

niques is given below. The upper limit of all three techniques can be extended indefinitely by appropriate dilution.

2.1.1 GFAAS Range. As reported in Method 7191 of SW-846 (Citation 5 in Bibliography), the optimum concentration range for GFAAS is 5 to 100  $\mu\text{g Cr/l}$  of concentrated analyte.

2.1.2 ICP Range. A linear response curve for ICP can be obtained in the range of 10 to at least 500  $\mu\text{g Cr/l}$  of absorbing solution.

2.1.3 IC/PCR Range. In 40 CFR part 266, appendix IX, the lower limit of the detection range for IC/PCR when employing a preconcentration procedure is reported to be about 0.1  $\mu\text{g Cr}^{+6/l}$  of absorbing solution.

##### 2.2 Sensitivity.

###### 2.2.1 Analytical Sensitivity.

2.2.1.1 ICP Analytical Sensitivity. The minimum detection limit for ICP, as reported in Method 6010A of SW-846, is 7  $\mu\text{g Cr/l}$ .

2.2.1.2 GFAAS Analytical Sensitivity. The minimum detection limit for GFAAS, as reported in Method 7191 of SW-846, is 1  $\mu\text{g Cr/l}$ .

2.2.1.3 IC/PCR Analytical Sensitivity. The minimum detection limit for IC/PCR with a preconcentrator, as reported in 40 CFR part 266, appendix IX is 0.05  $\mu\text{g Cr}^{+6/l}$ .

2.2.2 In-stack Sensitivity. The in-stack sensitivity depends upon the analytical detection limit, the volume of stack gas sampled, and the total volume of the impinger absorbing solution plus the rinses. Using the analytical detection limits given in sections 2.2.1.1, 2.2.1.2, and 2.2.1.3; a stack gas sample volume of 1.7 dscm; and a total liquid sample volume of 500 ml; the corresponding in-stack detection limits are 0.0021 mg Cr/dscm for ICP, 0.00015 mg Cr/dscm for GFAAS, and 0.000015 mg  $\text{Cr}^{+6}/\text{dscm}$  for IC/PCR with preconcentration. However, it is recommended that the concentration of Cr in

the analytical solutions be at least five times the analytical detection limit to optimize sensitivity in the analyses. Using this guideline and the same assumptions for impinger sample volume and stack gas sample volume (500 ml and 1.7 dscm, respectively), the recommended minimum stack concentrations for optimum sensitivity are 0.0103 mg Cr/dscm for ICP, 0.00074 mg Cr/dscm for GFAAS, and 0.000074 mg Cr<sup>+6</sup>/dscm for IC/PCR with preconcentration. If required, the in-stack detection limits can be improved by either increasing the stack gas sample volume, reducing the volume of the digested sample for GFAAS, improving the analytical detection limits, or any combination of the three.

2.3 Precision. The following precision data have been reported for the three analytical methods. In the case of the GFAAS there is also bias data. In all cases, when sampling precision is combined with analytical precision, the resulting overall precision may be lower.

2.3.1 GFAAS Precision. As reported in Method 7191 of SW-846, in a single laboratory (EMSL), using Cincinnati, Ohio tap water spiked at concentrations of 19, 48, and 77 µg Cr/l, the standard deviations were ±0.1, ±0.2, and ±0.8, respectively. Recoveries at these levels were 97 percent, 101 percent, and 102 percent, respectively.

2.3.2 ICP Precision. As reported in Method 6010A of SW-846, in an EPA round-robin Phase 1 study, seven laboratories applied the ICP technique to acid/distilled water matrices that had been spiked with various metal concentrates. For true values of 10, 50, and 150 µg Cr/l; the mean reported values were 10, 50, and 149 µg Cr/l; and the mean percent relative standard deviations were 18, 3.3, and 3.8 percent, respectively.

2.3.3 IC/PCR Precision. As reported in 40 CFR part 266, appendix IX, the precision of the IC/PCR with sample preconcentration is 5 to 10 percent; the overall precision for sewage sludge incinerators emitting 120 ng/dscm of Cr<sup>+6</sup> and 3.5 µg/dscm of total Cr is 25 percent and 9 percent for Cr<sup>+6</sup> and total Cr, respectively; and for hazardous waste incinerators emitting 300 ng/dscm of Cr<sup>+6</sup> the precision is 20 percent.

#### 2.4 Interferences.

2.4.1 GFAAS Interferences. Low concentrations of calcium and/or phosphate may cause interferences; at concentrations above 200 µg/l, calcium's effect is constant and eliminates the effect of phosphate. Calcium nitrate is therefore added to the concentrated analyte to ensure a known constant effect. Other matrix modifiers recommended by the instrument manufacturer may also be suitable. Nitrogen should not be used as the purge gas due to cyanide band interference. Background correction may be required because of possible significant levels of nonspecific absorption and scattering

at the 357.9 nm analytical wavelength. Zeeman or Smith-Hieftje background correction is recommended to correct for interferences due to high levels of dissolved solids in the alkaline impinger solutions.

#### 2.4.2 ICP Interferences.

2.4.2.1 ICP Spectral Interferences. (a) Spectral interferences are caused by:

- (1) Overlap of a spectral line from another element;
- (2) Unresolved overlap of molecular band spectra;
- (3) Background contribution from continuous or recombination phenomena; and
- (4) Stray light from the line emission of high-concentration elements.

(b) Spectral overlap may be compensated for by computer correcting the raw data after monitoring and measuring the interfering element. At the 267.72-nm Cr analytical wavelength, iron, manganese, and uranium are potential interfering elements. Background and stray light interferences can usually be compensated for by a background correction adjacent to the analytical line. Unresolved overlap requires the selection of an alternative Cr wavelength. Consult the instrument manufacturer's operation manual for interference correction procedures.

2.4.2.2 ICP Physical Interferences. High levels of dissolved solids in the samples may cause significant inaccuracies due to salt buildup at the nebulizer and torch tips. This problem can be controlled by diluting the sample or providing for extended rinse times between sample analyses. Standards are prepared in the same matrix as the samples (i.e., 0.1 N NaOH or 0.1 N NaHCO<sub>3</sub>).

2.4.2.3 ICP Chemical Interferences. These include molecular compound formation, ionization effects and solute vaporization effects, and are usually not significant in ICP, especially if the standards and samples are matrix matched.

2.4.3 IC/PCR Interferences. Components in the sample matrix may cause Cr<sup>+6</sup> to convert to trivalent chromium (Cr<sup>+3</sup>) or cause Cr<sup>+3</sup> to convert to Cr<sup>+6</sup>. The chromatographic separation of Cr<sup>+6</sup> using ion chromatography reduces the potential for other metals to interfere with the post-column reaction. For the IC/PCR analysis, only compounds that coelute with Cr<sup>+6</sup> and affect the diphenylcarbazide reaction will cause interference. Periodic analyses of reagent water blanks are used to demonstrate that the analytical system is essentially free of contamination. Sample cross-contamination that can occur when high-level and low-level samples or standards are analyzed alternately is eliminated by thorough purging of the sample loop. Purging can easily be achieved by increasing the injection volume of the samples to ten times the size of the sample loop.

### 3. Apparatus

3.1 Sampling Train. A schematic of the sampling train used in this method is shown in Figure 306-1. The train is the same as Method 5, section 2.1 (40 CFR part 60, appendix A), except that the filter is omitted, and quartz or borosilicate glass must be used for the probe nozzle and liner in place of stainless steel. It is not necessary to heat the probe liner. Probe fittings of plastic such as Teflon, polypropylene, etc. are recommended over metal fittings to prevent contamination. If desired, a single combined probe nozzle and liner may be used, but such a single glass piece is *not* a requirement of this methodology. Use 0.1 N NaOH or 0.1 N NaHCO<sub>3</sub> in the impingers in place of water.

3.2 Sample Recovery. Same as Method 5, section 2.2 (40 CFR part 60, appendix A), with the following exceptions:

3.2.1 Probe-Liner and Probe-Nozzle Brushes. Brushes are not necessary for sample recovery. If a probe brush is used, it must be nonmetallic.

3.2.2 Sample Recovery Solution. Use 0.1 N NaOH or 0.1 N NaHCO<sub>3</sub>, whichever was used as the impinger absorbing solution, in place of acetone to recover the sample.

3.2.3 Sample Storage Containers. Polyethylene, with leak-free screw cap, 500 ml or 1,000 ml.

3.2.4 Filtration Apparatus for IC/PCR. Teflon, or equivalent, filter holder and 0.45 µm acetate, or equivalent, filter.

3.3 Analysis. For analysis, the following equipment is needed.

#### 3.3.1 General.

3.3.1.1 Phillips Beakers. (Phillips beakers are preferred, but regular beakers can also be used.)

3.3.1.2 Hot Plate.

3.3.1.3 Volumetric Flasks. Class A, various sizes as appropriate.

3.3.1.4 Assorted Pipettes.

3.3.2 Analysis by GFAAS.

3.3.2.1 Chromium Hollow Cathode Lamp or Electrodeless Discharge Lamp.

3.3.2.2 Graphite Furnace Atomic Absorption Spectrophotometer.

3.3.3 Analysis by ICP.

3.3.3.1 ICP Spectrometer. Computer-controlled emission spectrometer with background correction and radio frequency generator.

3.3.3.2 Argon Gas Supply. Welding grade or better.

3.3.4 Analysis by IC/PCR.

3.3.4.1 IC/PCR System. High performance liquid chromatograph pump, sample injection valve, post-column reagent delivery and mixing system, and a visible detector, capable of operating at 520 nm, all with a nonmetallic (or inert) flow path. An electronic peak area mode is recommended, but other recording devices and integration techniques are acceptable provided the repeatability criteria and the linearity criteria for the calibration curve described in section 6.4.1 can be satisfied. A sample loading system will be required if preconcentration is employed.

3.3.4.2 Analytical Column. A high performance ion chromatograph (HPIC) nonmetallic column with anion separation characteristics and a high loading capacity designed for separation of metal chelating compounds to prevent metal interference. Resolution described in section 5.5 must be obtained. A nonmetallic guard column with the same ion-exchange material is recommended.

3.3.4.3 Preconcentration Column. An HPIC nonmetallic column with acceptable anion retention characteristics and sample loading rates as described in section 5.5.

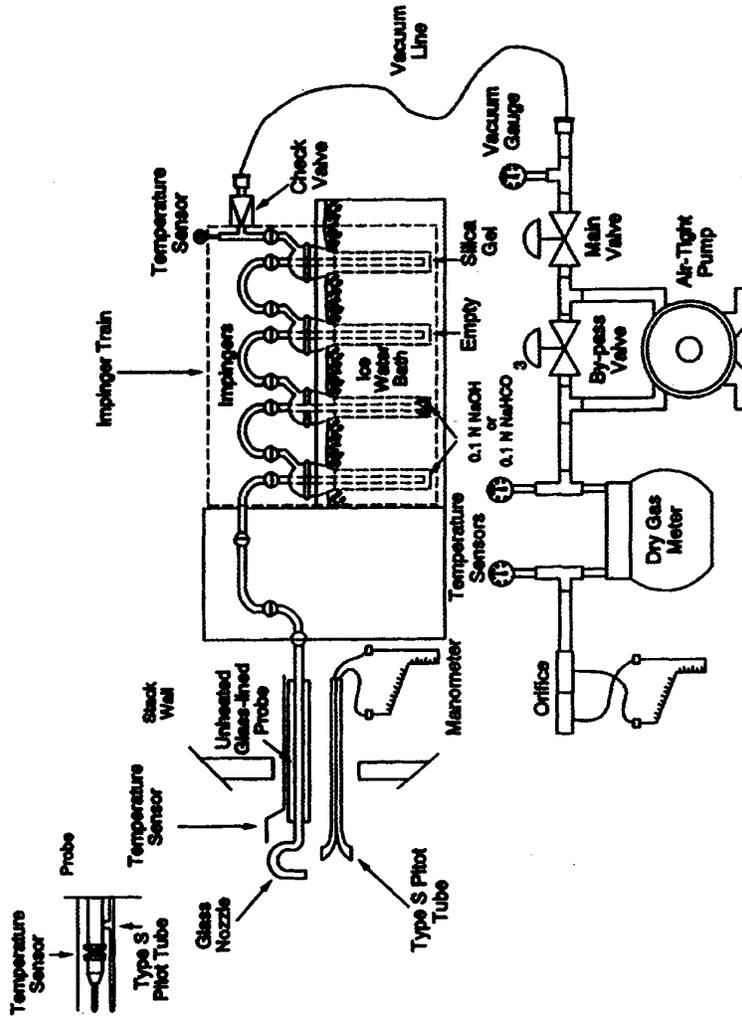


Figure 306-1. Sampling Train Schematic.

3.3.4.4 0.45- $\mu$ m Filter Cartridge. For the removal of insoluble material. To be used just prior to sample injection/analysis.

#### 4. Reagents

Unless otherwise indicated, all reagents shall conform to the specifications established by the Committee on Analytical Reagents of the American Chemical Society (ACS reagent grade). Where such specifications are not available, use the best available grade.

##### 4.1 Sampling.

4.1.1 Water. Reagent water that conforms to ASTM Specification D1193-77, Type II (incorporated by reference—see §63.14). It is recommended that water blanks be checked prior to preparing sampling reagents to ensure that the Cr content is less than the analytical detection limit.

4.1.2 Sodium Hydroxide (NaOH) Absorbing Solution, 0.1 N or Sodium Bicarbonate ( $\text{NaHCO}_3$ ) Absorbing Solution, 0.1 N. Dissolve 4.0 g of sodium hydroxide in 1 l of water, or dissolve 8.5 g of sodium bicarbonate in 1 l of water.

##### 4.2 Sample Recovery.

4.2.1 0.1 N NaOH or 0.1 N  $\text{NaHCO}_3$ . See section 4.1.2. Use the same solution for recovery as was used in the impingers.

4.2.2 pH Indicator Strip, for IC/PCR. pH indicator capable of determining the pH of solutions between the pH range of 7 and 12, at 0.5 pH intervals.

##### 4.3 Sample Preparation and Analysis.

4.3.1 Nitric Acid ( $\text{HNO}_3$ ), Concentrated, for GFAAS. Trace metals grade or better  $\text{HNO}_3$  must be used for reagent preparation. The ACS reagent grade  $\text{HNO}_3$  is acceptable for cleaning glassware.

4.3.2  $\text{HNO}_3$ , 1.0 percent (v/v), for GFAAS. Add, with stirring, 10 ml of concentrated  $\text{HNO}_3$  to 800 ml of water. Dilute to 1,000 ml with water. This reagent shall contain less than 0.001 mg Cr/l.

4.3.3 Calcium Nitrate  $\text{Ca}(\text{NO}_3)_2$  Solution (10  $\mu\text{g}$  Ca/ml) for GFAAS. Prepare the solution by weighing 36 mg of  $\text{Ca}(\text{NO}_3)_2$  into a 1 l volumetric flask. Dilute with water to 1 l.

4.3.4 Matrix Modifier, for GFAAS. See instrument manufacturer's manual for suggested matrix modifier.

4.3.5 Chromatographic Eluent, for IC/PCR. The eluent used in the analytical system is ammonium sulfate based. Prepare by adding 6.5 ml of 29 percent ammonium hydroxide ( $\text{NH}_4\text{OH}$ ) and 33 g of ammonium sulfate ( $(\text{NH}_4)_2\text{SO}_4$ ) to 500 ml of reagent water. Dilute to 1 l with reagent water and mix well. Other combinations of eluents and/or columns may be employed provided peak resolution, as described in section 5.5, repeatability and linearity, as described in section 6.4.1, and analytical sensitivity are acceptable.

4.3.6 Post-Column Reagent, for IC/PCR. An effective post-column reagent for use with the chromatographic eluent described

in section 4.3.5 is a diphenylcarbazine (DPC) based system. Dissolve 0.5 g of 1,5-diphenylcarbazine in 100 ml of ACS grade methanol. Add 500 ml of reagent water containing 50 ml of 96 percent spectrophotometric grade sulfuric acid. Dilute to 1 l with reagent water.

4.3.7 Chromium Standard Stock Solution (1,000 mg/l). Procure a certified aqueous standard or dissolve 2.829 g of potassium dichromate ( $\text{K}_2\text{Cr}_2\text{O}_7$ ) in water and dilute to 1 l.

4.3.8 Calibration Standards for GFAAS. Chromium solutions for GFAAS calibration shall be prepared to contain 1.0 percent (v/v)  $\text{HNO}_3$ . The zero standard shall be 1.0 percent (v/v)  $\text{HNO}_3$ . Calibration standards should be prepared daily by diluting the Cr standard stock solution (section 4.3.7) with 1.0 percent  $\text{HNO}_3$ . Use at least four standards to make the calibration curve. Suggested levels are 0, 5, 50, and 100  $\mu\text{g}$  Cr/l.

4.3.9 Calibration Standards for ICP or IC/PCR. Prepare calibration standards for ICP or IC/PCR by diluting the Cr standard stock solution (section 4.3.7) with 0.1 N NaOH or 0.1 N  $\text{NaHCO}_3$ , whichever was used as the impinger absorbing solution, to achieve a matrix similar to the actual field samples. Suggested levels are 0, 25, 50, and 100  $\mu\text{g}$  Cr/l for ICP, and 0, 0.5, 5, and 10  $\mu\text{g}$   $\text{Cr}^{+6}$ /l for IC/PCR.

#### 4.4 Glassware Cleaning Reagents.

4.4.1  $\text{HNO}_3$ , Concentrated. The ACS reagent grade or equivalent.

4.4.2 Water. Reagent water that conforms to ASTM Specification D1193-77, Type II, (incorporated by reference—see §63.14).

4.4.3  $\text{HNO}_3$ , 10 percent (v/v). Add with stirring 500 ml of concentrated  $\text{HNO}_3$  to a flask containing approximately 4,000 ml of water. Dilute to 5,000 ml with water. Mix well. The reagent shall contain less than 2  $\mu\text{g}$  Cr/l.

#### 5. Procedure

5.1 Sampling. (a) Same as Method 5, section 4.1 (40 CFR part 60, appendix A), except omit the filter and filter holder from the sampling train, use a glass nozzle and probe liner, do not heat the probe, place 100 ml of 0.1 N NaOH or 0.1 N  $\text{NaHCO}_3$  in each of the first two impingers, and record the data for each run on a data sheet such as the one shown in Figure 306-2.

(b) Clean all glassware prior to sampling in hot soapy water designed for laboratory cleaning of glassware. Next, rinse the glassware three times with tap water, followed by three additional rinses with reagent water. Then soak all glassware in 10 percent (v/v)  $\text{HNO}_3$  solution for a minimum of 4 hours, rinse three times with reagent water, and allowed to air dry. Cover all glassware openings where contamination can occur with Parafilm, or equivalent, until the sampling train is assembled for sampling.

(c) If the sample is going to be analyzed for  $\text{Cr}^{+6}$  using IC/PCR, determine the pH of the

solution in the first impinger at the end of the sampling run using a pH indicator strip. The pH of the solution should be greater than 8.5. If not, the concentration of the NaOH or NaHCO<sub>3</sub> impinger absorbing solution should be increased to 0.5 N and the sample should be rerun.

5.2 Sample Recovery. Follow the basic procedures of Method 5, section 4.2, with the exceptions noted below; a filter is not recovered from this train.

5.2.1 Container No. 1. Measure the volume of the liquid in the first, second, and third impingers and quantitatively transfer into a labelled sample container. Use approximately 200 to 300 ml of 0.1 N NaOH or 0.1 N NaHCO<sub>3</sub> to rinse the probe nozzle, probe liner, three impingers, and connecting glassware; add this rinse to the same container.

5.2.2 Container No. 2 (Reagent Blank). Place approximately 500 ml of 0.1 N NaOH or 0.1 N NaHCO<sub>3</sub> absorbing solution in a labeled sample container.

5.2.3 Sample Filtration for IC/PCR. If the sample is to be analyzed for Cr<sup>+6</sup> by IC/PCR, it must be filtered immediately following recovery to remove any insoluble matter. Nitrogen gas may be used as a pressure assist to the filtration process. Filter the entire contents of Container No. 1 through a 0.45- $\mu$ m acetate filter (or equivalent), and collect the filtrate in a 1,000 ml graduated cylinder. Rinse the sample container with reagent water three separate times, pass these rinses through the filter, and add the rinses to the sample filtrate. Determine the final volume of the filtrate and rinses and return them to the rinsed polyethylene sample container.

5.2.4 Sample Preservation. Refrigerate samples upon receipt. (Containers Nos. 1 and 2).

5.3 Sample Preparation and Analysis for GFAAS. For analysis by GFAAS, an acid digestion of the alkaline impinger solution is required. Two types of blanks are required for the analysis. The calibration blank is used in establishing the analytical curve, and the reagent blank is used to assess possible contamination resulting from the sample processing. The 1.0 percent HNO<sub>3</sub> is the calibration blank. The 0.1 N NaOH solution or the 0.1 N NaHCO<sub>3</sub> from section 5.2.2 is the reagent blank. The reagent blank must be carried through the complete analytical procedure, including the acid digestion, and must contain the same acid concentration in the final solution as the sample solutions.

5.3.1 Acid Digestion for GFAAS. (a) In a beaker, add 10 ml of concentrated HNO<sub>3</sub> to a sample aliquot of 100 ml taken for analysis. Cover the beaker with a watch glass. Place the beaker on a hot plate and reflux the sample down to near dryness. Add another 5 ml of concentrated HNO<sub>3</sub> to complete the digestion. Carefully reflux the sample volume down to near dryness. Wash down the beaker walls and watch glass with reagent water. The final concentration of HNO<sub>3</sub> in the solution should be 1 percent (v/v). Transfer the digested sample to a 50 ml volumetric flask. Add 0.5 ml of concentrated HNO<sub>3</sub>, and 1 ml of the 10  $\mu$ g/ml of Ca (NO<sub>3</sub>)<sub>2</sub>.

(b) Dilute to 50 ml with reagent water. A different final volume may be used, based on the expected Cr concentration, but the HNO<sub>3</sub> concentration must be maintained at 1 percent (v/v).



5.3.2 Sample Analysis by GFAAS. (a) The 357.9-nm wavelength line shall be used. Follow the manufacturer's operating instructions for all other spectrophotometer parameters.

(b) Furnace parameters suggested by the manufacturer should be employed as guidelines. Since temperature-sensing mechanisms and temperature controllers can vary between instruments and/or with time, the validity of the furnace parameters must be periodically confirmed by systematically altering the furnace parameters while analyzing a standard. In this manner, losses of analyte due to higher-than-necessary temperature settings or losses in sensitivity due to less than optimum settings can be minimized. Similar verification of furnace parameters may be required for complex sample matrices. Calibrate the GFAAS system following the procedures specified in section 6.

(c) Inject a measured aliquot of digested sample into the furnace and atomize. If the concentration found exceeds the calibration range, the sample should be diluted with the calibration blank solution (1.0 percent  $\text{HNO}_3$ ) and reanalyzed. Consult the operator's manual for suggested injection volumes. The use of multiple injections can improve accuracy and help detect furnace pipetting errors.

(d) Analyze a minimum of one matrix-matched reagent blank per sample batch to determine if contamination or any memory effects are occurring. Analyze a calibration blank and a midpoint calibration check standard after approximately every 10 sample injections.

(e) Calculate the Cr concentrations:

(1) By the method of standard additions (see operator's manual).

(2) From the calibration curve, or

(3) Directly from the instrument's concentration readout. All dilution or concentration factors must be taken into account. All results should be reported in  $\mu\text{g Cr/ml}$  with up to three significant figures.

5.4 Sample Analysis by ICP. (a) The ICP measurement is performed directly on the alkaline impinger solution; acid digestion is not necessary provided the samples and standards are matrix matched. However, ICP should only be used when the solution analyzed has a Cr concentration greater than 35  $\mu\text{g/l}$ .

(b) Two types of blanks are required for the analysis. The calibration blank is used in establishing the analytical curve, and the reagent blank is used to assess possible contamination resulting from sample processing. Use either 0.1 N NaOH or 0.1 N  $\text{NaHCO}_3$ , whichever was used for the impinger absorbing solution, for the calibration blank. The calibration blank can be prepared fresh in the laboratory; it does not have to be from the same batch of solution that was used in the field. Prepare a sufficient quantity to

flush the system between standards and samples. The reagent blank (section 5.2.2) is a sample of the impinger solution used for sample collection that is collected in the field during the testing program.

(c) Set up the instrument with proper operating parameters including wavelength, background correction settings (if necessary), and interfering element correction settings (if necessary). The instrument must be allowed to become thermally stable before beginning performance of measurements (usually requiring at least 30 min of operation prior to calibration). During this warmup period, the optical calibration and torch position optimization may be performed (consult the operator's manual).

(d) Calibrate the instrument according to the instrument manufacturer's recommended procedures, and the procedures specified in section 6.3. Before analyzing the samples, reanalyze the highest calibration standard as if it were a sample. Concentration values obtained should not deviate from the actual values by more than 5 percent, or the established control limits, whichever is lower (see sections 6 and 7). If they do, follow the recommendations of the instrument manufacturer to correct for this condition.

(e) Flush the system with the calibration blank solution for at least 1 min before the analysis of each sample or standard. Analyze the midpoint calibration standard and the calibration blank after each 10 samples. Use the average intensity of multiple exposures for both standardization and sample analysis to reduce random error.

(f) Dilute and reanalyze samples that are more concentrated than the linear calibration limit or use an alternate, less sensitive Cr wavelength for which quality control data are already established.

(g) If dilutions are performed, the appropriate factors must be applied to sample values. All results should be reported in  $\mu\text{g Cr/ml}$  with up to three significant figures.

5.5 Sample Analyses by IC/PCR. (a) The  $\text{Cr}^{+6}$  content of the sample filtrate is determined by IC/PCR. To increase sensitivity for trace levels of chromium, a preconcentration system is also used in conjunction with the IC/PCR.

(b) Prior to preconcentration and/or analysis, filter all field samples through a 0.45- $\mu\text{m}$  filter. This filtration should be conducted just prior to sample injection/analysis.

(c) The preconcentration is accomplished by selectively retaining the analyte on a solid absorbent (as described in section 3.4.3.3), followed by removal of the analyte from the absorbent. Inject the sample into a sample loop of the desired size (use repeated loadings or a larger size loop for greater sensitivity). The  $\text{Cr}^{+6}$  is collected on the resin bed of the column. Switch the injection valve so that the eluent displaces the concentrated  $\text{Cr}^{+6}$  sample, moving it off the

preconcentration column and onto the IC anion separation column. After separation from other sample components, the  $\text{Cr}^{+6}$  forms a specific complex in the post-column reactor with the DPC reaction solution, and the complex is detected by visible absorbance at a wavelength of 520 nm. The amount of absorbance measured is proportional to the concentration of the  $\text{Cr}^{+6}$  complex formed. Compare the IC retention time and the absorbance of the  $\text{Cr}^{+6}$  complex with known  $\text{Cr}^{+6}$  standards analyzed under identical conditions to provide both qualitative and quantitative analyses.

(d) Two types of blanks are required for the analysis. The calibration blank is used in establishing the analytical curve, and the reagent blank is used to assess possible contamination resulting from sample processing. Use either 0.1 N NaOH or 0.1 N  $\text{NaHCO}_3$ , whichever was used for the impinger solution, for the calibration blank. The calibration blank can be prepared fresh in the laboratory; it does not have to be from the same batch of solution that was used in the field. The reagent blank (section 5.2.2) is a sample of the impinger solution used for sample collection that is collected in the field during the testing program.

(e) Prior to sample analysis, establish a stable baseline with the detector set at the required attenuation by setting the eluent flow rate at approximately 1 ml/min and the post-column reagent flow rate at approximately 0.5 ml/min. Note: As long as the ratio of eluent flow rate to PCR flow rate remains constant, the standard curve should remain linear. Inject a sample of reagent water to ensure that no  $\text{Cr}^{+6}$  appears in the water blank.

(f) First, inject the calibration standards prepared, as described in section 4.3.9 to cover the appropriate concentration range, starting with the lowest standard first. Next, inject, in duplicate, the calibration reference standard (as described in section 7.3.1), followed by the reagent blank (section 5.2.2), and the field samples. Finally, repeat the injection of the calibration standards to assess instrument drift. Measure areas or heights of the  $\text{Cr}^{+6}$ /DPC complex chromatogram peaks. The response for replicate, consecutive injections of samples must be within 5 percent of the average response, or the injection should be repeated until the 5 percent criterion can be met. Use the average response (peak areas or heights) from the duplicate injections of calibration standards to generate a linear calibration curve. From the calibration curve, determine the concentrations of the field samples employing the average response from the duplicate injections.

#### 6. Calibration

6.1 Sampling Train Calibration. Perform all of the calibrations described in Method 5, section 5 (40 CFR part 60, appendix A). The

alternate calibration procedures described in section 7 of Method 5 (40 CFR part 60, appendix A) may also be used.

6.2 GFAAS Calibration. Either run a series of chromium standards and a calibration blank and construct a calibration curve by plotting the concentrations of the standards against the absorbencies, or using the method of standard additions, plot added concentration versus absorbance. For instruments that read directly in concentration, set the curve corrector to read out the proper concentration, if applicable. This is customarily performed automatically with most instrument computer-based data systems.

6.2.1 GFAAS Calibration Curve. If a calibration curve is used, it should be prepared daily with a minimum of a calibration blank and three standards. Calibration standards for total chromium should start with 1 percent v/v  $\text{HNO}_3$  with no chromium for the calibration blank, with appropriate increases in total chromium concentration for the other calibration standards (see section 4.3.9). Calibration standards should be prepared fresh daily.

6.3 ICP Calibration. Calibrate the instrument according to the instrument manufacturer's recommended procedures, using a calibration blank and three standards for the initial calibration. Calibration standards should be prepared fresh daily, as described in section 4.3.9. Be sure that samples and calibration standards are matrix matched. Flush the system with the calibration blank between each standard. Use the average intensity of multiple exposures for both standardization and sample analysis to reduce random error.

6.4 IC/PCR Calibration. Prepare a calibration curve using the calibration blank and three calibration standards prepared fresh daily as described in section 4.3.9. Run the standards with the field samples as described in section 5.5.

#### 7. Quality Control

##### 7.1 GFAAS Quality Control

7.1.1 GFAAS Calibration Reference Standards. If a calibration curve is used, it must be verified by use of at least one calibration reference standard (made from a reference material or other independent standard material) at or near the mid-range of the calibration curve. The calibration reference standard must be measured within 10 percent of its true value for the curve to be considered valid. The curve must be validated before sample analyses are performed.

7.1.2 GFAAS Check Standards. (a) Run a check standard and a calibration blank after approximately every 10 sample injections, and at the end of the analytical run. These standards are run, in part, to monitor the life and performance of the graphite tube. Lack of reproducibility or a significant change in the signal for the check standard

indicates that the graphite tube should be replaced. Check standards can be the mid-range calibration standard or the reference standard. The results of the check standard shall agree within 10 percent of the expected value. If not, terminate the analyses, correct the problem, recalibrate the instrument, and reanalyze all samples analyzed subsequent to the last acceptable check standard analysis.

(b) The results of the calibration blank are to agree within three standard deviations of the mean blank value. If not, repeat the analysis two more times and average the results. If the average is not within three standard deviations of the background mean, terminate the analyses, correct the problem, recalibrate, and reanalyze all samples analyzed subsequent to the last acceptable calibration blank analysis.

7.1.3 GFAAS Duplicate Samples. Run one duplicate sample for every 20 samples, (or one per source test, whichever is more frequent). Duplicate samples are brought through the whole sample preparation and analytical process separately. Duplicate samples shall agree within 10 percent.

7.1.4 GFAAS Matrix Spiking. Spiked samples shall be prepared and analyzed daily to ensure that correct procedures are being followed and that all equipment is operating properly. Spiked sample recovery analyses should indicate a recovery for the Cr spike of between 75 and 125 percent. Spikes are added prior to any sample preparation. Cr levels in the spiked sample should provide final solution concentrations that fall within the linear portion of the calibration curve.

7.1.5 GFAAS Method of Standard Additions. Whenever sample matrix problems are suspected and standard/sample matrix matching is not possible or whenever a new sample matrix is being analyzed, the method of standard additions shall be used for the analysis of all extracts. Section 5.4.2 of Method 12 (40 CFR part 60, appendix A) specifies a performance test to determine if the method of standard additions is necessary.

7.1.6 GFAAS Reagent Blank Samples. Analyze a minimum of one matrix-matched reagent blank (section 5.2.2) per sample batch to determine if contamination or memory effects are occurring. The results should agree within three standard deviations of the mean blank value.

## 7.2 ICP Quality Control.

7.2.1 ICP Interference Check. Prepare an interference check solution to contain known concentrations of interfering elements that will provide an adequate test of the correction factors in the event of potential spectral interferences. Two potential interferences, iron and manganese, may be prepared as 1,000 µg/ml and 200 µg/ml solutions, respectively. The solutions should be prepared in dilute HNO<sub>3</sub> (1-5 percent). Particular care must be taken to ensure that the solutions and/or salts used to prepare the

solutions are of ICP grade purity (i.e., that no measurable Cr contamination exists in the salts/solutions). Commercially prepared interfering element check standards are available. Verify the interelement correction factors every three months by analyzing the interference check solution. The correction factors are calculated according to the instrument manufacturer's directions. If interelement correction factors are used properly, no false Cr should be detected.

7.2.2 ICP Calibration Reference Standards. Prepare a calibration reference standard in the same alkaline matrix as the calibration standards; it should be at least 10 times the instrumental detection limit. This reference standard should be prepared from a different Cr stock solution source than that used for preparation of the calibration curve standards and is used to verify the accuracy of the calibration curve. Prior to sample analysis, analyze at least one reference standard. The calibration reference standard must be measured within 10 percent of its true value for the curve to be considered valid. The curve must be validated before sample analyses are performed.

7.2.3 ICP Check Standards. Run a check standard and a calibration blank after every 10 samples, and at the end of the analytical run. Check standards can be the mid-range calibration standard or the reference standard. The results of the check standard shall agree within 10 percent of the expected value; if not, terminate the analyses, correct the problem, recalibrate the instrument, and rerun all samples analyzed subsequent to the last acceptable check standard analysis. The results of the calibration blank are to agree within three standard deviations of the mean blank value. If not, repeat the analysis two more times and average the results. If the average is not within three standard deviations of the background mean, terminate the analyses, correct the problem, recalibrate, and reanalyze all samples analyzed subsequent to the last acceptable calibration blank analysis.

7.2.4 ICP Duplicate Samples. Analyze one duplicate sample for every 20 samples, (or one per source test, whichever is more frequent). Duplicate samples are brought through the whole sample preparation and analytical process. Duplicate samples shall agree within 10 percent.

7.2.5 ICP Reagent Blank Samples. Analyze a minimum of one matrix-matched reagent blank (section 5.2.2) per sample batch to determine if contamination or memory effects are occurring. The results should agree within three standard deviations of the mean blank value.

## 7.3 IC/PCR Quality Control.

7.3.1 IC/PCR Calibration Reference Standards. Prepare a calibration reference standard in the same alkaline matrix as the calibration standards at a concentration that is

at or near the mid-point of the calibration curve. This reference standard should be prepared from a different Cr stock solution source than that used for preparing the calibration curve standards. The reference standard is used to verify the accuracy of the calibration curve. Prior to sample analysis, analyze at least one reference standard. The results of this analysis of the reference standard must be within 10 percent of the true value of the reference standard for the calibration curve to be considered valid. The curve must be validated before sample analyses are performed.

7.3.2 IC/PCR Check Standards. (a) Run the calibration blank and calibration standards with the field samples as described in section 5.5. For each standard, determine the peak areas (recommended) or the peak heights, calculate the average response from the duplicate injections, and plot the average response against the Cr+6 concentration in  $\mu\text{g/l}$ . The individual responses for each calibration standard determined before and after field sample analysis must be within 5 percent of the average response for the analysis to be valid. If the 5 percent criteria is exceeded, excessive drift and/or instrument degradation may have occurred, and must be corrected before further analyses are performed.

(b) Employing linear regression, calculate a predicted value for each calibration standard using the average response for the duplicate injections. Each predicted value must be within 7 percent of the actual value for the calibration curve to be considered acceptable. If not acceptable, remake and/or rerun the calibration standards. If the calibration curve is still unacceptable, reduce the range of the curve.

7.3.3 IC/PCR Duplicate Samples. Analyze one duplicate sample for every 20 samples, (or one per source test, whichever is more frequent). Duplicate samples are brought through the whole sample preparation and analytical process. Duplicate samples shall agree within 10 percent.

7.3.4 ICP Reagent Blank Samples. Analyze a minimum of one matrix-matched reagent blank (section 5.2.2) per sample batch to determine if contamination or memory effects are occurring. The results should agree within three standard deviations of the mean blank value.

#### 8. Emission Calculations

Carry out the calculations, retaining one extra decimal figure beyond that of the acquired data. Round off figures after final calculations.

8.1 Total Cr in Sample. Calculate  $M_{Cr}$ , the total  $\mu\text{g}$  Cr in each sample, as follows:  
 $M_{Cr} = (V_{mi}) (C_s) (F) (D)$  Eq.306-1  
 where:

$V_{mi}$  = Volume of impinger contents plus rinses, ml.

$C_s$  = Concentration of Cr in sample solution,  $\mu\text{g Cr/ml}$ .

F = Dilution factor.

= Volume of aliquot after dilution, ml; Volume of aliquot before dilution, ml

D = Digestion factor.

= Volume of sample aliquot after digestion, ml; Volume of sample aliquot submitted to digestion, ml

8.2 Average Dry Gas Meter Temperature and Average Orifice Pressure Drop. Same as Method 5, section 6.2.

8.3 Dry Gas Volume, Volume of Water Vapor, Moisture Content. Same as Method 5, sections 6.3, 6.4, and 6.5, respectively.

8.4 Cr Emission Concentration. Calculate  $C_{Cr}$ , the Cr concentration in the stack gas, in mg/dscm on a dry basis, corrected to standard conditions, as follows:

$$C_{Cr} = (10^{-3} \text{ mg}/\mu\text{g}) (M_{Cr}/V_{m(\text{std})}) \quad \text{Eq. 306-2}$$

where:

$V_{m(\text{std})}$  = Gas sample volume measured by the dry gas meter, corrected to dry standard conditions, dscm.

8.5 Isokinetic Variation, Acceptable Results. Same as Method 5, sections 6.11 and 6.12, respectively.

#### 9. Bibliography

1. "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," U. S. Environmental Protection Agency Publication SW-846, 2nd Edition, July 1982.
2. Cox, X.B., R.W. Linton, and F.E. Butler. Determination of Chromium Speciation in Environmental Particles—A Multitechnique Study of Ferrochrome Smelter Dust. Accepted for publication in Environmental Science and Technology.
3. Same as Bibliography of Method 5, Citations 2 to 5 and 7.
4. California Air Resources Board, "Determination of Total Chromium and Hexavalent Chromium Emissions from Stationary Sources." Method 425, September 12, 1990.
5. "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", U.S. Environmental Protection Agency Publication SW-846, 3rd Edition, November 1986 as amended by Update I, November 1990.

#### METHOD 306A—DETERMINATION OF CHROMIUM EMISSIONS FROM DECORATIVE AND HARD CHROMIUM ELECTROPLATING AND ANODIZING OPERATIONS

##### 1. Applicability and Principle

1.1 Applicability. This method applies to the determination of chromium (Cr) in emissions from decorative and hard chromium electroplating facilities and anodizing operations. The method is less expensive and less complex to conduct than Method 306 of this

appendix. Correctly applied, the precision and bias of the sample results will be comparable to those obtained with the isokinetic Method 306 of this appendix. This method is applicable under ambient moisture, air, and temperature conditions.

1.2 Principle. A sample is extracted from the source at a constant sampling rate determined by a critical orifice and collected in a probe and impingers. The sampling time at the sampling traverse points is varied according to the stack gas velocity at each point to obtain a proportional sample. The concentration is determined by the same analytical procedures used in Method 306 of this appendix: inductively-coupled plasma emission spectrometry (ICP), graphite furnace atomic absorption spectrometry (GFAAS), or ion chromatography with a post-column reactor (IC/PCR).

#### *2. Range, Sensitivity, Precision, and Interferences*

Same as Method 306, section 2 of this appendix.

#### *3. Apparatus*

Note: Mention of trade names or specific products does not constitute endorsement by the Environmental Protection Agency.

3.1 Sampling Train. A schematic of the sampling train is shown in Figure 306A-1. The components of the train are available commercially, but some fabrication and assembly are required. If Method 306 equipment is available, the sampling train may be assembled as specified in Method 306 of this appendix and the sampling rate of the meter box set at the  $\Delta H_{90}$  specified for the calibrated orifice; this train is then operated as specified in this method.

3.1.1 Probe Nozzle/Tubing and Sheath. Use approximately 1/4 in. inside diameter (ID) glass or rigid plastic tubing about 8 in. long with a short 90° bend at one end to form the nozzle. Grind a slight taper on the nozzle end before making the bend. Attach the nozzle to flexible tubing of sufficient length to collect a sample from the stack. Use a straight piece of larger diameter rigid tubing (such as metal conduit or plastic water pipe) to form a sheath that begins about 1 in. from the 90° bend on the nozzle and encases the flexible tubing.

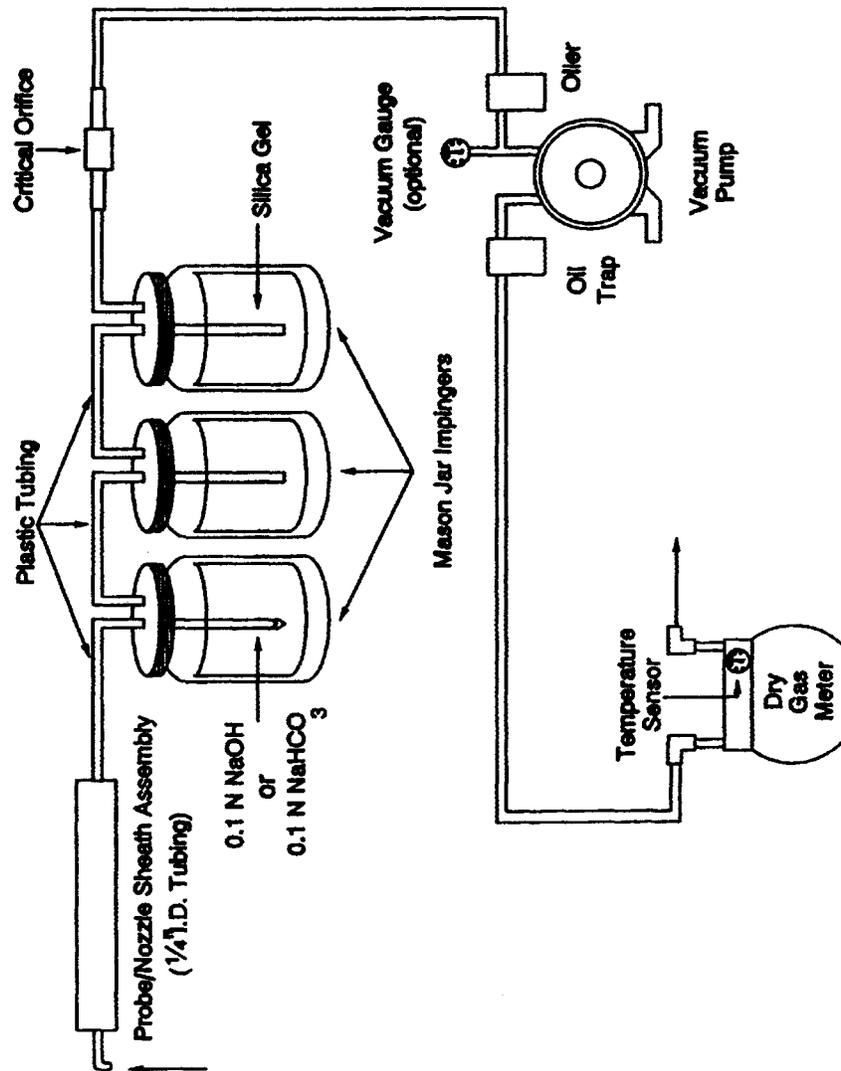


Figure 306A-1. Sampling Train Schematic.

3.1.2 S-Type Pitot. Same as Method 2, section 3 (40 CFR part 60, appendix A).

3.1.3 Sample Line. Use thick wall flexible plastic tubing (e.g., polyethylene, polypropylene, or polyvinylchloride) about ¼ in. to ⅜ in. ID to connect the train components. A combination of rigid plastic tubing and thin wall flexible tubing may be used as long as neither tubing collapses when leak-checking the train. Metal tubing cannot be used.

3.1.4 Impingers. One quart capacity "Mason" glass canning jars with vacuum seal lids are used. Three impingers are required: the first is for collecting the pollutant in the absorbing solution, the second is empty and is used to collect any absorbing solution carried over from the first impinger, and the third contains the drying agent. Install leak-tight inlet and outlet tubes in the lids of each impinger for assembly with the train. The tubes may be made of approximately ¼ in. ID glass or rigid plastic tubing. For the inlet tube of the first impinger, heat the glass or plastic tubing and draw until the tubing separates. Cut the tip off until the tip orifice is ⅜ in. in diameter. When fabricating the first impinger, place the tip orifice ⅜ in. above the bottom of the jar when assembled. For the second impinger, the inlet tube need not be drawn and sized, but the tip should be approximately 2 in. above the bottom of the jar. The inlet tube of the third impinger should extend to about ½ in. above the bottom of the jar. Locate the outlet tube end of all impingers about ½ in. beneath the bottom of the lid.

3.1.5 Manometer. Inclined/vertical type, or equivalent device, as described in section 2.2 of Method 2 (40 CFR part 60, appendix A).

3.1.6 Critical Orifice. The critical orifice is a small restriction in the sample line (approximately ¼ in. in diameter) that is located upstream of the vacuum pump and sets the sample rate at about 0.75 cfm. An orifice can be made of ⅜ in. brass tubing approximately ⅜ in. long sealed inside larger diameter, approximately ¼ in., brass tubing to serve as a critical orifice giving a constant sample flow. Materials other than brass can be used to construct the critical orifice as long as the flow through the sampling train is approximately 0.75 cfm.

3.1.7 Connecting Hardware. Standard pipe and fittings, ¼ in. or ⅜ in., are used to install the vacuum pump and dry gas meter in the sampling train.

3.1.8 Pump Oiler. A glass oil reservoir with a wick mounted at the vacuum pump inlet lubricates the pump vanes. The oiler should be an inline type and not vented to the atmosphere.

3.1.9 Vacuum Pump. Gast Model 0522-V103-G18DX, or equivalent, capable of delivering at least 1.5 cfm at 15 in. Hg vacuum.

3.1.10 Oil Trap. An empty glass oil reservoir without wick is mounted at pump out-

let to prevent oil from reaching the dry gas meter.

3.1.11 Dry Gas Meter. A Rockwell model 175-s test meter, or equivalent, with a thermometer installed to monitor meter temperature. The dry gas meter must be capable of measuring volume to within 2 percent.

3.2 Sample Recovery.

3.2.1 Wash Bottles. These are glass or inert plastic, 500 or 1000 ml, with spray tube.

3.2.2 Sample Containers. The first mason jar impinger of the sampling train serves as the sample container. A new lid and plastic wrap are substituted for the impinger inlet/outlet assembly.

3.3 Analysis. Same as Method 306, section 3.3 of this appendix.

#### 4. Reagents

4.1 Sampling. Same as Method 306, section 4.1 of this appendix.

4.2 Sample Recovery. Same as Method 306, section 4.2 of this appendix.

#### 5. Procedure

5.1 Sampling.

5.1.1 Pretest Preparation.

5.1.1.1 Port Location. Locate the sampling ports as specified in section 2.1 of Method 1 (40 CFR part 60, appendix A). Use a total of 24 sampling points for round ducts and 25 points for rectangular ducts. Locate the sampling points as specified in section 2.3 of Method 1 (40 CFR part 60, Appendix A). Mark the pitot and sampling probe with thin strips of tape to permit velocity pressure and sample traversing. For ducts less than 12 in. in diameter, use a total of 16 points.

5.1.1.2 Velocity Pressure Traverse. (a) Perform a velocity pressure traverse before the first sample run. Figure 306A-2 may be used to record velocity pressure data. If testing occurs over several days, perform the traverse at the beginning of each day. Perform velocity pressure traverses as specified in section 3 of Method 2 (40 CFR part 60, appendix A), but record only the  $\Delta p$  (velocity head) values for each sampling point.

(b) Check for cyclonic flow during the first traverse to verify that it does not exist; if cyclonic flow does exist, make sure that the absolute average angle of misalignment does not exceed 20°. If the average angle of misalignment exceeds 20° at an outlet location, install straightening vanes to eliminate the cyclonic flow. If it is necessary to test an inlet location where cyclonic flow exists, it may not be possible to install straightening vanes. In this case, a variation of the alignment method must be used. This must be approved by the Administrator.



5.1.1.3 Point Sampling Times. Since the sampling rate of the train is held constant by the critical orifice, it is necessary to calculate specific sampling times for each point in order to obtain a proportional sample. If all sampling can be completed in a single day, it is necessary to calculate the point sampling times only once. If sampling occurs over several days, recalculate the point sam-

ple times each day. Determine the average of the  $\Delta p$  values obtained during the traverse (Figure 306A-2). Calculate the sampling times for each point using Equation 306A-1. Convert the decimal parts of minutes to seconds. If the stack diameter is less than 12 in., use 7.5 minutes in place of 5 minutes in the equation and 16 sampling points.

$$\text{Minutes at point } n = \frac{\sqrt{\text{Point } n \Delta p}}{(\sqrt{\Delta p})_{\text{avg}}} \times 5 \text{ minutes} \quad \text{Eq. 306A-1}$$

Where:

n=Sampling point number.

$\Delta p$ =Velocity head measured by Type-S pitot tube, in. H<sub>2</sub>O

5.1.1.4 Preparation of Sampling Train. Assemble the sampling train as shown in Figure 306A-1. Secure the nozzle-liner assembly to the sheath to prevent slipping when sampling. Before charging, rinse the first mason jar impinger with either 0.1 N sodium hydroxide (NaOH) or 0.1 N sodium bicarbonate (NaHCO<sub>3</sub>); discard the solution. Put 250 ml of 0.1 N NaOH or 0.1 N NaHCO<sub>3</sub> absorbing solution into the first mason jar impinger. Similarly, rinse the second mason jar impinger and leave empty. Put silica gel into the third mason jar impinger until the impinger is

half full. Place the impingers into an ice bath and check to ensure that the lids are tight.

5.1.1.5 Train Leak Check Procedure. Wait until the ice has cooled the impingers. Next, seal the nozzle with a finger covered by a piece of clear plastic wrap and turn on the pump. The vacuum in the line between the pump and the critical orifice must be at least 15 in. Hg. Observe any leak rate on the dry gas meter. The leak rate should not exceed 0.02 cfm.

5.1.2 Sampling Train Operation.

5.1.2.1 Record all pertinent process and sampling data on the data sheet (see Figure 306A-3). Ensure that the process operation is suitable for sample collection.

|  |   |
|--|---|
| Plant _____  | Date _____ Run Number _____   |
| Sampling Site _____                                      | Operator _____  |
| Total Cr catch, $M_{Cr}$ , $\mu\text{g}$ _____           | Stack radius, $r$ , in. _____   |
| Avg dry gas meter temp, $T_m$ , $^{\circ}\text{F}$ _____ | Avg sq. rt. $\Delta p$ , $(\sqrt{\Delta p})_{avg}$ , in. $\text{H}_2\text{O}$ _____ |
| Meter correction factor, $Y_m$ _____                     | Stack temp, $T_s$ , $^{\circ}\text{F}$ _____  |
| Meter volume, $V_m$ , $\text{ft}^3$ _____                | Leak rate before run, cfm _____   |
| Barometric press, $P_{bar}$ , in. Hg _____               | Leak rate after run, cfm _____  |
| Start clock time _____                                   | Stop meter volume, $\text{ft}^3$ _____  |
| Stop clock time _____                                    | Start meter volume, $\text{ft}^3$ _____   |

REMARKS: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

| Point No. | Sample (Min/Sec) | Gas Meter Temp ( $^{\circ}\text{F}$ ) |
|-----------|------------------|---------------------------------------|
|           |                  |                                       |
|           |                  |                                       |
|           |                  |                                       |
|           |                  |                                       |
|           |                  |                                       |
|           |                  |                                       |
|           |                  |                                       |
|           |                  |                                       |

| Point No. | Sample (Min/Sec) | Gas Meter Temp ( $^{\circ}\text{F}$ ) |
|-----------|------------------|---------------------------------------|
|           |                  |                                       |
|           |                  |                                       |
|           |                  |                                       |
|           |                  |                                       |
|           |                  |                                       |
|           |                  |                                       |
|           |                  |                                       |
|           |                  |                                       |

$$C_{Cr} = \frac{(M_{Cr}) (T_m + 460)}{(499.8) (Y_m) (V_m) (P_{bar})}$$

$$\text{kg/hr} = (C_{Cr}) (0.0001597) (r^2) (\sqrt{\Delta p})_{avg} \sqrt{\frac{(T_s + 460)}{(P_{bar}) (28.73)}}$$

mg/cubic meter, ( $C_p$ ) \_\_\_\_\_

(Optional) kg/hr \_\_\_\_\_

Figure 306A-3. Chromium Constant Sampling Rate Field Data Sheet.

5.1.2.2 Place the probe/nozzle into the duct at the first sampling point and seal the port. Turn on the pump. A minimum vacuum of 15 in. Hg or 0.47 atmosphere between the critical orifice and pump is required to maintain critical flow. Sample for the time interval previously determined for that point. Move to the second point and sample for the time interval determined for that point; sample all points on the traverse in this manner. Keep ice around the impingers during the run. Complete the traverse and turn off the pump. Move to the next sampling port and repeat. Record the final dry gas meter reading. (NOTE: If an approximate mass emission rate is desired, record the stack temperature before and after the run.)

5.1.2.3 Post Test Leak Check. Remove the probe assembly and flexible tubing from the first impinger. Do not cover the nozzle. Seal the inlet tube of the first impinger with a finger covered by clear plastic wrap and turn on the pump. The vacuum in the line between the pump and the critical orifice must be at least 15 in. Hg. Observe any leak rate on the dry gas meter. If the leak rate exceeds 0.02 cfm, reject the run. If the leak rate is acceptable, take the probe assembly and impinger assembly to the sample recovery area.

#### 5.2 Sample Recovery.

5.2.1 Container No. 1. (a) After the train has been moved to the sample recovery area, disconnect the tubing that joins the first impinger with the second.

(b) The first impinger jar is also used as the sample container jar. Unscrew the lid from the first impinger jar. Lift the inlet/outlet tube assembly almost out of the jar, and using the wash bottle, rinse the outside of the impinger tip that was immersed in the impinger jar with extra absorbing solution; rinse the inside of the tip as well.

(c) Recover the second impinger by removing the lid and pouring any contents from the second impinger into the first impinger. Rinse the second impinger including the inside and outside of the impinger stem as well as any connecting plastic tubing with extra absorbing solution and place the rinse into the first impinger.

(d) Hold the nozzle and connecting plastic tubing in a vertical position so that the tubing forms a "U." Using the wash bottle, partially fill the tubing with sampling reagent. Raise and lower the end of the plastic tubing several times to cause the reagent to contact the major portion of the internal parts of the assembly thoroughly. Do not raise the solution level too high or part of the sample will be lost. Place the nozzle end of the assembly over the mouth of the first impinger jar (sample container) and elevate the plastic tubing so that the solution flows rapidly out of the nozzle. Perform this procedure three times. Next, repeat the recovery procedure but allow the solution to flow rapidly out

the open end of the plastic tubing into the first impinger jar.

(e) Place a piece of clear plastic wrap over the mouth of the first impinger jar. Use a standard lid and band assembly to seal the jar. Label the jar with the sample number and mark the liquid level to gauge any losses during handling.

5.2.2 Container No. 2 (Reagent Blank). Place approximately 500 ml of the 0.1 N NaOH or 0.1 N NaHCO<sub>3</sub> absorbing solution in a labeled sample container.

5.2.3 Sample Filtration for IC/PCR. If the sample is to be analyzed for Cr<sup>+6</sup> by IC/PCR, it must be filtered immediately following recovery as described in section 5.2.3 of Method 306 of this appendix.

5.3 Analysis. Sample preparation and analysis procedures are identical to Method 306, section 5.3 of this appendix.

### 6. Calibration

6.1 Dry Gas Meter. (a) Dry gas meter calibrations may be performed by either the manufacturer, a firm who provides calibration services, or the tester. The dry gas meter calibration coefficient (Y<sub>m</sub>) must be determined prior to initial use of the meter, and must be checked following each field use.

(b) If the dry gas meter is new, the manufacturer will have specified the Y<sub>m</sub> for the meter. The manufacturer may also have included a calibration orifice and a data sheet with the meter that may be used for calibration purposes. The sheet will specify a standard cubic foot volume and a sample time, and these values were determined when the orifice was used to set the initial Y<sub>m</sub> for the meter. The Y<sub>m</sub> may be checked by disconnecting the critical orifice in the sampling train and replacing it with the calibration orifice. The inlet side of the calibration orifice is open to the atmosphere and is not reconnected to the sample train. Record the initial dry gas meter volume and meter temperature. Turn on the pump and operate it for the number of minutes specified by the manufacturer's data sheet. Stop the pump and record the final dry gas meter volume and temperature. Subtract the start volume from the stop volume and average the temperatures. Check the Y<sub>m</sub> for the dry gas meter after the test by using the following equation:

$$Y = \frac{\text{Ft.}^3_{\text{m}} (T_{\text{m}} + 460)}{17.647 (\text{Ft.}^3_{\text{pt}}) (P_{\text{bar}})}$$

Where:

Ft.<sup>3</sup><sub>m</sub>=Cubic feet given by meter manufacturer

T<sub>m</sub>=Temperature of meter in degrees Fahrenheit

$Ft^3_{pt}$ =Cubic feet from dry gas meter, post test

$P_{bar}$ =Barometric pressure in inches of mercury

Compare the  $Y_m$  just calculated with the  $Y_m$  given by the manufacturer:

$$\frac{Y_m(\text{manufacturer})}{Y_m(\text{calculated after test})}$$

If this value is between 0.95 and 1.05, the  $Y_m$  of the meter is acceptable. If the value lies outside the specified range, the test series shall either be voided, or calculations for the test series shall be performed using whichever meter coefficient value (i.e., before and after) that gives the lower value of total sample volume. Return the dry gas meter to the manufacturer for recalibration. The calibration may also be conducted as specified in section 5.3.1 or section 7 of Method 5 (40 CFR part 60, appendix A), except that it is only necessary to check the calibration at an ap-

proximate flow rate of 0.75 cfm. The calibration of the dry gas meter must be checked after each field use in the same manner. If the values of  $Y_m$  obtained before and after a test series differ by more than 5%, the test series shall either be voided, or calculations for the test series shall be performed using whichever meter coefficient value (i.e., before or after) that gives the lower value of total sample volume.

6.2 GFAA Spectrometer. Same as Method 306, section 6.2 of this appendix.

6.3 ICP Spectrometer. Same as Method 306, section 6.3 of this appendix.

#### 7. Quality Control

Same as Method 306, section 7 of this appendix.

#### 8. Calculations

8.1 Pollutant Concentration. Calculate  $C_{Cr}$ , the Cr concentration in the stack gas, in mg/dscm on a dry basis as follows:

$$C_{Cr} = \frac{(M_{Cr})(T_m + 460)}{(499.8)(Y_m)(V_m)(P_{bar})} \quad \text{Eq. 306A-2}$$

where:

$M_{Cr}$ =Amount of Cr in sample from Method 306 of this appendix, Eq. 306-1,  $\mu\text{g}$ .

$T_m$ =Dry gas meter temperature,  $^{\circ}\text{F}$ .

$Y_m$ =Dry gas meter correction factor, dimensionless.

$V_m$ =Dry gas meter volume,  $\text{ft}^3$ .

$P_{bar}$ =Barometric pressure, in. Hg.

8.2 Approximate Mass Emission Rate (Optional). Calculate an approximate mass emission rate of Cr in kg/hr using the following equation:

$$\text{kg/hr} = (0.0001597)(C_{Cr})(r^2)(\sqrt{\Delta p})_{avg} \sqrt{\frac{(T_s + 460)}{(P_{bar})(28.73)}} \quad \text{Eq. 306A-3}$$

where:

$r$ =Radius of stack, in.

$(\sqrt{\Delta p})_{avg}$ =Average of  $\sqrt{\Delta p}$  values.

$T_s$ =Stack temperature,  $^{\circ}\text{F}$ .

$P_{bar}$ =Barometric pressure, in. Hg.

$C_{Cr}$ =Concentration of Cr, mg/dscm.

NOTE: The emission rate calculated using Equation 306A-3 is based on an assumed moisture content of 2%.

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**METHOD 306-B—SURFACE TENSION MEASUREMENT AND RECORDKEEPING FOR CHROMIUM PLATING TANKS USED AT ELECTROPLATING AND ANODIZING FACILITIES**

*1. Applicability and Principle*

1.1 **Applicability.** This method is applicable to all decorative plating and anodizing operations where a wetting agent is used in the tank as the primary mechanism for reducing emissions from the surface of the solution.

1.2 **Principle.** During an electroplating or anodizing operation, gas bubbles generated during the process rise to the surface of the tank liquid and burst. Upon bursting, tiny droplets of chromic acid become entrained in ambient air. The addition of a wetting agent to the tank bath reduces the surface tension of the liquid and diminishes the formation of these droplets.

*2. Apparatus*

2.1 **Stalagmometer.** Any commercially available stalagmometer or equivalent surface tension measuring device may be used to measure the surface tension of the plating or anodizing tank liquid.

2.2 **Tensiometer.** A tensiometer may be used to measure the surface tension of the tank liquid provided the procedures specified in ASTM Method D 1331-89, Standard Test Methods for Surface and Interfacial Tension of Solutions of Surface Active Agents (incorporated by reference—see §63.14) are followed.

*3. Procedure*

3.1 The surface tension of the tank bath may be measured by using a tensiometer, a stalagmometer or any other device suitable for measuring surface tension in dynes per centimeter. If the tensiometer is used, the instructions given in ASTM Method D 1331-89, Standard Test Methods for Surface and Interfacial Tension of Solutions of Surface Active Agents (incorporated by reference—see §63.14) must be followed. If a stalagmometer or other device is used to measure surface tension, the instructions that came with the measuring device must be followed.

3.2 (a) Measurements of the bath surface tension are done using a progressive system which minimizes the number of surface tension measurements required when the proper surface tension is maintained. Initially, measurements must be made every 4 hours of tank operation for the first 40 hours of tank operation after the compliance date. Once there are no exceedances during 40 hours of

tank operation, measurements may be conducted once every 8 hours of tank operation. Once there are no exceedances during 40 hours of tank operation, measurements may be conducted once every 40 hours of tank operation on an on-going basis, until an exceedance occurs. The maximum time interval for measurements is once every 40 hours of tank operation.

(b) If a measurement of the surface tension of the solution is above the 45 dynes per centimeter limit, the time interval reverts back to the original monitoring schedule of once every 4 hours. A subsequent decrease in frequency would then be allowed according to the previous paragraph.

*4. Recordkeeping*

4.1 Log book of surface tension measurements and fume suppressant additions. The surface tension of the plating or anodizing tank bath must be measured as specified in section 3.2. The measurements must be recorded in the log book. In addition to the record of surface tension measurements, the frequency of fume suppressant maintenance additions and the amount of fume suppressant added during each maintenance addition will be recorded in the log book. The log book will be readily available for inspection by regulatory personnel.

4.2 Instructions for apparatus used in measuring surface tension. Also included with the log book must be a copy of the instructions for the apparatus used for measuring the surface tension of the plating or anodizing bath. If a tensiometer is used, a copy of ASTM Method D 1331-89, Standard Methods for Surface and Interfacial Tension of Solutions of Surface Active Agents (incorporated by reference—see §63.14) must be included with the log book.

**METHOD 307—DETERMINATION OF EMISSIONS FROM HALOGENATED SOLVENT VAPOR CLEANING MACHINES USING A LIQUID LEVEL PROCEDURE**

*1. Applicability and Principle*

1.1 **Applicability.** This method is applicable to the determination of the halogenated solvent emissions from solvent vapor cleaners in the idling mode.

1.2 **Principle.** The solvent level in the solvent cleaning machine is measured using inclined liquid level indicators. The change in liquid level corresponds directly to the amount of solvent lost from the solvent cleaning machine.

*2. Apparatus*

NOTE: Mention of trade names or specific products does not constitute endorsement by the Environmental Protection Agency.

2.1 Inlined Liquid Level Indicator. A schematic of the inlined liquid level indicators used in this method is shown in figure 307-1; two inlined liquid level indicators having 0.05 centimeters divisions or smaller shall be used. The liquid level indicators shall be made of glass, Teflon, or any similar material that will not react with the solvent being used. A 6-inch by 1-inch slope is recommended; however the slope may vary depending on the size and design of the solvent cleaning machine.

NOTE: It is important that the inclined liquid level indicators be constructed with ease of reading in mind. The inclined liquid level indicators should also be mounted so that they can be raised or lowered if necessary to suit the solvent cleaning machine size.

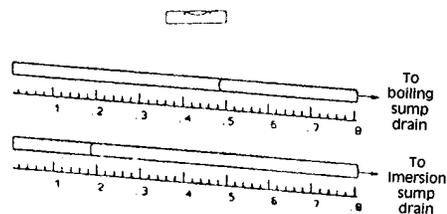


Figure 307-1. Inclined Liquid Level Indicator Apparatus.

2.2 Horizontal Indicator. Device to check the inclined liquid level indicators orientation relative to horizontal.

2.3 Velocity Meter. Hotwire and vane anemometers, or other devices capable of measuring the flow rates ranging from 0 to 15.2 meters per minute across the solvent cleaning machine.

3. Procedure

3.1 Connection of the Inclined Liquid Level Indicator. Connect one of the inclined liquid level indicators to the boiling sump drain and the other inclined liquid level indicator to the immersion sump drain using Teflon tubing and the appropriate fittings. A schematic diagram is shown in figure 307-2.

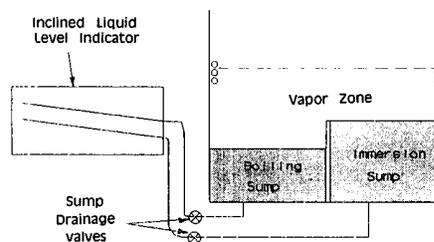


Figure 307-2. Solvent Cleaner Test Setup.

3.2 Positioning of Velocity Meter. Position the velocity meter so that it measures the flow rate of the air passing directly across the solvent cleaning machine.

3.3 Level the Inclined Liquid Level Indicators.

3.4 Initial Inclined Liquid Level Indicator Readings. Open the sump drainage valves. Allow the solvent cleaning machine to operate long enough for the vapor zone to form and the system to stabilize (check with manufacturer). Record the inclined liquid level indicators readings and the starting time on the data sheet. A sample data sheet is provided in figure 307-3.

Date \_\_\_\_\_

Run \_\_\_\_\_

Solvent type \_\_\_\_\_

Solvent density,  $g/m^3$  ( $lb/ft^3$ ) \_\_\_\_\_

Length of boiling sump ( $S_b$ ), m (ft) \_\_\_\_\_

Width of boiling sump ( $W_b$ ), m (ft) \_\_\_\_\_

Length of immersion sump ( $S_i$ ), m (ft) \_\_\_\_\_

Width of immersion sump ( $W_i$ ), m (ft) \_\_\_\_\_

Length of solvent vapor/air interface ( $S_v$ ), m (ft) \_\_\_\_\_

Width of solvent vapor/air interface ( $W_v$ ), m (ft) \_\_\_\_\_

| Clock time | Boiling sump reading | Immersion sump reading | Flow rate reading |
|------------|----------------------|------------------------|-------------------|
|            |                      |                        |                   |

Figure 307-3. Data sheet.

3.5 Final Inclined Liquid Level Indicator Readings. At the end of the 16-hour test run, check to make sure the inclined liquid level indicators are level; if not, make the necessary adjustments. Record the final inclined liquid level indicators readings and time.

3.6 Determination of Solvent Vapor/Air Interface Area for Each Sump. Determine the area of the solvent/air interface of the individual sumps. Whenever possible, physically measure these dimensions, rather than using factory specifications. A schematic of the dimensions of a solvent cleaning machine is provided in figure 307-4.

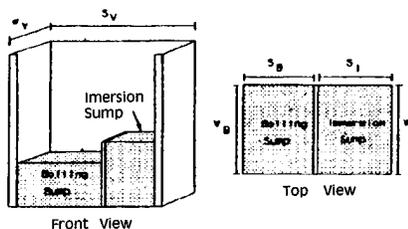


Figure 307-4. Solvent Cleaner Dimensions.

4. Calculations

4.1 Nomenclature.

- A<sub>B</sub> = area of boiling sump interface, m<sup>2</sup> (ft<sup>2</sup>).
- A<sub>I</sub> = area of immersion sump interface, m<sup>2</sup> (ft<sup>2</sup>).
- A<sub>V</sub> = area of solvent/air interface, m<sup>2</sup> (ft<sup>2</sup>).
- E = emission rate, kg/m<sup>2</sup>-hr (lb/ft<sup>2</sup>-hr).
- K = 100,000 cm · g/m · kg for metric units.  
= 12 in./ft for English units.
- L<sub>BF</sub> = final boiling sump inclined liquid level indicators reading, cm (in.).
- L<sub>Bi</sub> = initial boiling sump inclined liquid level indicators reading, cm (in.).
- L<sub>If</sub> = final immersion sump inclined liquid level indicators reading, cm (in.).
- L<sub>Ii</sub> = initial immersion sump inclined liquid level indicators reading, cm (in.).
- S<sub>B</sub> = length of the boiling sump, m (ft).
- S<sub>I</sub> = length of the immersion sump, m (ft).
- S<sub>V</sub> = length of the solvent vapor/air interface, m (ft).
- W<sub>B</sub> = width of the boiling sump, m (ft).
- W<sub>I</sub> = width of the immersion sump, m (ft).
- W<sub>V</sub> = width of the solvent vapor/air interface, m (ft).

ρ = density of solvent, g/m<sup>3</sup> (lb/ft<sup>3</sup>).  
θ = test time, hr.

4.2 Area of Sump Interfaces. Calculate the areas of the boiling and immersion sump interfaces as follows:

$$A_B = S_B W_B \quad \text{Eq. 307-1}$$

$$A_I = S_I W_I \quad \text{Eq. 307-2}$$

4.3 Area of Solvent/Air Interface. Calculate the area of the solvent vapor/air interface as follows:

$$A_V = S_V W_V \quad \text{Eq. 307-3}$$

4.4 Emission Rate. Calculate the emission rate as follows:

$$E = \frac{(L_{BF} - L_{Bi})\rho A_B + (L_{If} - L_{Ii})\rho A_I}{KA_V\theta}$$

Eq. 307-4

METHOD 311—ANALYSIS OF HAZARDOUS AIR POLLUTANT COMPOUNDS IN PAINTS AND COATINGS BY DIRECT INJECTION INTO A GAS CHROMATOGRAPH

1. Scope and Application

1.1 Applicability. This method is applicable for determination of most compounds designated by the U.S. Environmental Protection Agency as volatile hazardous air pollutants (HAP's) (See Reference 1) that are contained in paints and coatings. Styrene, ethyl acrylate, and methyl methacrylate can be measured by ASTM D 4827-93 or ASTM D 4747-87. Formaldehyde can be measured by ASTM PS 9-94 or ASTM D 1979-91. Toluene diisocyanate can be measured in urethane prepolymers by ASTM D 3432-89. Method 311 applies only to those volatile HAP's which are added to the coating when it is manufactured, not to those which may form as the coating cures (reaction products or cure volatiles). A separate or modified test procedure must be used to measure these reaction products or cure volatiles in order to determine the total volatile HAP emissions from a coating. Cure volatiles are a significant component of the total HAP content of some coatings. The term "coating" used in this method shall be understood to mean paints and coatings.

1.2 Principle. The method uses the principle of gas chromatographic separation and quantification using a detector that responds to concentration differences. Because there are many potential analytical systems or sets of operating conditions that may represent useable methods for determining the concentrations of the compounds cited in Section 1.1 in the applicable matrices, all

systems that employ this principle, but differ only in details of equipment and operation, may be used as alternative methods, provided that the prescribed quality control, calibration, and method performance requirements are met. Certified product data sheets (CPDS) may also include information relevant to the analysis of the coating sample including, but not limited to, separation column, oven temperature, carrier gas, injection port temperature, extraction solvent, and internal standard.

### 2. Summary of Method

Whole coating is added to dimethylformamide and a suitable internal standard compound is added. An aliquot of the sample mixture is injected onto a chromatographic column containing a stationary phase that separates the analytes from each other and from other volatile compounds contained in the sample. The concentrations of the analytes are determined by comparing the detector responses for the sample to the responses obtained using known concentrations of the analytes.

### 3. Definitions [Reserved]

#### 4. Interferences

4.1 Coating samples of unknown composition may contain the compound used as the internal standard. Whether or not this is the case may be determined by following the procedures of Section 11 and deleting the addition of the internal standard specified in Section 11.5.3. If necessary, a different internal standard may be used.

4.2 The GC column and operating conditions developed for one coating formulation may not ensure adequate resolution of target analytes for other coating formulations. Some formulations may contain nontarget analytes that coelute with target analytes. If there is any doubt about the identification or resolution of any gas chromatograph (GC) peak, it may be necessary to analyze the sample using a different GC column or different GC operating conditions.

4.3 Cross-contamination may occur whenever high-level and low-level samples are analyzed sequentially. The order of sample analyses specified in Section 11.7 is designed to minimize this problem.

4.4 Cross-contamination may also occur if the devices used to transfer coating during the sample preparation process or for injecting the sample into the GC are not adequately cleaned between uses. All such devices should be cleaned with acetone or other suitable solvent and checked for plugs or cracks before and after each use.

#### 5. Safety

5.1 Many solvents used in coatings are hazardous. Precautions should be taken to

avoid unnecessary inhalation and skin or eye contact. This method may involve hazardous materials, operations, and equipment. This test method does not purport to address all of the safety problems associated with its use. It is the responsibility of the user of this test method to establish appropriate safety and health practices and to determine the applicability of regulatory limitations in regards to the performance of this test method.

5.2 Dimethylformamide is harmful if inhaled or absorbed through the skin. The user should obtain relevant health and safety information from the manufacturer. Dimethylformamide should be used only with adequate ventilation. Avoid contact with skin, eyes, and clothing. In case of contact, immediately flush skin or eyes with plenty of water for at least 15 minutes. If eyes are affected, consult a physician. Remove and wash contaminated clothing before reuse.

5.3 User's manuals for the gas chromatograph and other related equipment should be consulted for specific precautions to be taken related to their use.

#### 6. Equipment and Supplies

NOTE: Certified product data sheets (CPDS) may also include information relevant to the analysis of the coating sample including, but not limited to, separation column, oven temperature, carrier gas, injection port temperature, extraction solvent, and internal standard.

##### 6.1 Sample Collection.

6.1.1 Sampling Containers. Dual-seal sampling containers, four to eight fluid ounce capacity, should be used to collect the samples. Glass sample bottles or plastic containers with volatile organic compound (VOC) impermeable walls must be used for corrosive substances (e.g., etch primers and certain coating catalysts such as methyl ethyl ketone (MEK) peroxide). Sample containers, caps, and inner seal liners must be inert to the compounds in the sample and must be selected on a case-by-case basis.

6.1.1.1 Other routine sampling supplies needed include waterproof marking pens, tubing, scrappers/spatulas, clean rags, paper towels, cooler/ice, long handle tongs, and mixing/stirring paddles.

6.1.2 Personal safety equipment needed includes eye protection, respiratory protection, a hard hat, gloves, steel toe shoes, etc.

6.1.3 Shipping supplies needed include shipping boxes, packing material, shipping labels, strapping tape, etc.

6.1.4 Data recording forms and labels needed include coating data sheets and sample can labels.

NOTE: The actual requirements will depend upon the conditions existing at the source sampled.

## 6.2 Laboratory Equipment and Supplies.

6.2.1 Gas Chromatograph (GC). Any instrument equipped with a flame ionization detector and capable of being temperature programmed may be used. Optionally, other types of detectors (e.g., a mass spectrometer), and any necessary interfaces, may be used provided that the detector system yields an appropriate and reproducible response to the analytes in the injected sample. Autosampler injection may be used, if available.

6.2.2 Recorder. If available, an electronic data station or integrator may be used to record the gas chromatogram and associated data. If a strip chart recorder is used, it must meet the following criteria: A 1 to 10 millivolt (mV) linear response with a full scale response time of 2 seconds or less and a maximum noise level of  $\pm 0.03$  percent of full scale. Other types of recorders may be used as appropriate to the specific detector installed provided that the recorder has a full scale response time of 2 seconds or less and a maximum noise level of  $\pm 0.03$  percent of full scale.

6.2.3 Column. The column must be constructed of materials that do not react with components of the sample (e.g., fused silica, stainless steel, glass). The column should be of appropriate physical dimensions (e.g., length, internal diameter) and contain sufficient suitable stationary phase to allow separation of the analytes. DB-5, DB-Wax, and FFAP columns are commonly used for paint analysis; however, it is the responsibility of each analyst to select appropriate columns and stationary phases.

6.2.4 Tube and Tube Fittings. Supplies to connect the GC and gas cylinders.

6.2.5 Pressure Regulators. Devices used to regulate the pressure between gas cylinders and the GC.

6.2.6 Flow Meter. A device used to determine the carrier gas flow rate through the GC. Either a digital flow meter or a soap film bubble meter may be used to measure gas flow rates.

6.2.7 Septa. Seals on the GC injection port through which liquid or gas samples can be injected using a syringe.

6.2.8 Liquid Charging Devices. Devices used to inject samples into the GC such as clean and graduated 1, 5, and 10 microliter ( $\mu$ l) capacity syringes.

6.2.9 Vials. Containers that can be sealed with a septum in which samples may be prepared or stored. The recommended size is 25 ml capacity. Mininert® valves have been found satisfactory and are available from Pierce Chemical Company, Rockford, Illinois.

6.2.10 Balance. Device used to determine the weights of standards and samples. An analytical balance capable of accurately weighing to 0.0001 g is required.

## 7. Reagents and Standards

7.1 Purity of Reagents. Reagent grade chemicals shall be used in all tests. Unless otherwise specified, all reagents shall conform to the specifications of the Committee on Analytical Reagents of the American Chemical Society, where such specifications are available. Other grades may be used provided it is first ascertained that the reagent is of sufficient purity to permit its use without lessening the accuracy of determination.

7.2 Carrier Gas. Helium carrier gas shall have a purity of 99.995 percent or higher. High purity nitrogen may also be used. Other carrier gases that are appropriate for the column system and analyte may also be used. Ultra-high purity grade hydrogen gas and zero-grade air shall be used for the flame ionization detector.

7.3 Dimethylformamide (DMF). Solvent for all standards and samples. Some other suitable solvent may be used if DMF is not compatible with the sample or coelutes with a target analyte.

NOTE: DMF may coelute with ethylbenzene or p-xylene under the conditions described in the note under Section 6.2.3.

7.4 Internal Standard Materials. The internal standard material is used in the quantitation of the analytes for this method. It shall be gas chromatography spectrophotometric quality or, if this grade is not available, the highest quality available. Obtain the assay for the internal standard material and maintain at that purity during use. The recommended internal standard material is 1-propanol; however, selection of an appropriate internal standard material for the particular coating and GC conditions used is the responsibility of each analyst.

7.5 Reference Standard Materials. The reference standard materials are the chemicals cited in Section 1.1 which are of known identity and purity and which are used to assist in the identification and quantification of the analytes of this method. They shall be the highest quality available. Obtain the assays for the reference standard materials and maintain at those purities during use.

7.6 Stock Reference Standards. Stock reference standards are dilutions of the reference standard materials that may be used on a daily basis to prepare calibration standards, calibration check standards, and quality control check standards. Stock reference standards may be prepared from the reference standard materials or purchased as certified solutions.

7.6.1 Stock reference standards should be prepared in dimethylformamide for each analyte expected in the coating samples to be analyzed. The concentrations of analytes in the stock reference standards are not specified but must be adequate to prepare the calibration standards required in the

method. A stock reference standard may contain more than one analyte provided all analytes are chemically compatible and no analytes coelute. The actual concentrations prepared must be known to within 0.1 percent (e.g.,  $0.1000 \pm 0.0001$  g/g solution). The following procedure is suggested. Place about 35 ml of dimethylformamide into a tared ground-glass stoppered 50 ml volumetric flask. Weigh the flask to the nearest 0.1 mg. Add 12.5 g of the reference standard material and reweigh the flask. Dilute to volume with dimethylformamide and reweigh. Stopper the flask and mix the contents by inverting the flask several times. Calculate the concentration in grams per gram of solution from the net gain in weights, correcting for the assayed purity of the reference standard material.

NOTE: Although a glass-stoppered volumetric flask is convenient, any suitable glass container may be used because stock reference standards are prepared by weight.

7.6.2 Transfer the stock reference standard solution into one or more Teflon-sealed screw-cap bottles. Store, with minimal headspace, at  $-10^{\circ}\text{C}$  to  $0^{\circ}\text{C}$  and protect from light.

7.6.3 Prepare fresh stock reference standards every six months, or sooner if analysis results from daily calibration check standards indicate a problem. Fresh stock reference standards for very volatile HAP's may have to be prepared more frequently.

7.7 Calibration Standards. Calibration standards are used to determine the response of the detector to known amounts of reference material. Calibration standards must be prepared at a minimum of three concentration levels from the stock reference standards (see Section 7.6). Prepare the calibration standards in dimethylformamide (see Section 7.3). The lowest concentration standard should contain a concentration of analyte equivalent either to a concentration of no more than 0.01% of the analyte in a coating or to a concentration that is lower than the actual concentration of the analyte in the coating, whichever concentration is higher. The highest concentration standard should contain a concentration of analyte equivalent to slightly more than the highest concentration expected for the analyte in a coating. The remaining calibration standard should contain a concentration of analyte roughly at the midpoint of the range defined by the lowest and highest concentration calibration standards. The concentration range of the standards should thus correspond to the expected range of analyte concentrations in the prepared coating samples (see Section 11.5). Each calibration standard should contain each analyte for detection by this method expected in the actual coating samples (e.g., some or all of the compounds listed in Section 1.1 may be included). Each calibra-

tion standard should also contain an appropriate amount of internal standard material (response for the internal standard material is within 25 to 75 percent of full scale on the attenuation setting for the particular reference standard concentration level). Calibration Standards should be stored for 1 week only in sealed vials with minimal headspace. If the stock reference standards were prepared as specified in Section 7.6, the calibration standards may be prepared by either weighing each addition of the stock reference standard or by adding known volumes of the stock reference standard and calculating the mass of the standard reference material added. Alternative 1 (Section 7.7.1) specifies the procedure to be followed when the stock reference standard is added by volume. Alternative 2 (Section 7.7.2) specifies the procedure to be followed when the stock reference standard is added by weight.

NOTE: To assist with determining the appropriate amount of internal standard to add, as required here and in other sections of this method, the analyst may find it advantageous to prepare a curve showing the area response versus the amount of internal standard injected into the GC.

7.7.1 Preparation Alternative 1. Determine the amount of each stock reference standard and dimethylformamide solvent needed to prepare approximately 25 ml of the specific calibration concentration level desired. To a tared 25 ml vial that can be sealed with a crimp-on or Mininert® valve, add the total amount of dimethylformamide calculated to be needed. As quickly as practical, add the calculated amount of each stock reference standard using new pipets (or pipet tips) for each stock reference standard. Reweigh the vial and seal it. Using the known weights of the standard reference materials per ml in the stock reference standards, the volumes added, and the total weight of all reagents added to the vial, calculate the weight percent of each standard reference material in the calibration standard prepared. Repeat this process for each calibration standard to be prepared.

7.7.2 Preparation Alternative 2. Determine the amount of each stock reference standard and dimethylformamide solvent needed to prepare approximately 25 ml of the specific calibration concentration level desired. To a tared 25 ml vial that can be sealed with a crimp-on or Mininert® valve, add the total amount of dimethylformamide calculated to be needed. As quickly as practical, add the calculated amount of a stock reference standard using a new pipet (or pipet tip) and reweigh the vial. Repeat this process for each stock reference standard to be added. Seal the vial after obtaining the final weight. Using the known weight percents of the standard reference materials in the stock reference standards, the weights of the stock

reference standards added, and the total weight of all reagents added to the vial, calculate the weight percent of each standard reference material in the calibration standard prepared. Repeat this process for each calibration standard to be prepared.

#### *8. Sample Collection, Preservation, Transport, and Storage*

8.1 Copies of material safety data sheets (MSDS's) for each sample should be obtained prior to sampling. The MSDS's contain information on the ingredients, and physical and chemical properties data. The MSDS's also contain recommendations for proper handling or required safety precautions. Certified product data sheets (CPDS) may also include information relevant to the analysis of the coating sample including, but not limited to, separation column, oven temperature, carrier gas, injection port temperature, extraction solvent, and internal standard.

8.2 A copy of the blender's worksheet can be requested to obtain data on the exact coating being sampled. A blank coating data sheet form (see Section 18) may also be used. The manufacturer's formulation information from the product data sheet should also be obtained.

8.3 Prior to sample collection, thoroughly mix the coating to ensure that a representative, homogeneous sample is obtained. It is preferred that this be accomplished using a coating can shaker or similar device; however, when necessary, this may be accomplished using mechanical agitation or circulation systems.

8.3.1 Water-thinned coatings tend to incorporate or entrain air bubbles if stirred too vigorously; mix these types of coatings slowly and only as long as necessary to homogenize.

8.3.2 Each component of multicomponent coatings that harden when mixed must be sampled separately. The component mix ratios must be obtained at the facility at the time of sampling and submitted to the analytical laboratory.

8.4 Sample Collection. Samples must be collected in a manner that prevents or minimizes loss of volatile components and that does not contaminate the coating reservoir. A suggested procedure is as follows. Select a sample collection container which has a capacity at least 25 percent greater than the container in which the sample is to be transported. Make sure both sample containers are clean and dry. Using clean, long-handled tongs, turn the sample collection container upside down and lower it into the coating reservoir. The mouth of the sample collection container should be at approximately the midpoint of the reservoir (do not take the sample from the top surface). Turn the sample collection container over and slowly bring it to the top of the coating reservoir. Rapidly pour the collected coating into the

sample container, filling it completely. It is important to fill the sample container completely to avoid any loss of volatiles due to volatilization into the headspace. Return any unused coating to the reservoir or dispose as appropriate.

NOTE: If a company requests a set of samples for its own analysis, a separate set of samples, using new sample containers, should be taken at the same time.

8.5 Once the sample is collected, place the sample container on a firm surface and insert the inner seal in the container by placing the seal inside the rim of the container, inverting a screw cap, and pressing down on the screw cap which will evenly force the inner seal into the container for a tight fit. Using clean towels or rags, remove all residual coating material from the outside of the sample container after inserting the inner seal. Screw the cap onto the container.

8.5.1 Affix a sample label (see Section 18) clearly identifying the sample, date collected, and person collecting the sample.

8.5.2 Prepare the sample for transportation to the laboratory. The sample should be maintained at the coating's recommended storage temperature specified on the Material Safety Data Sheet, or, if no temperature is specified, the sample should be maintained within the range of 5°C to 38°C.

8.9 The shipping container should adhere to U.S. Department of Transportation specification DOT 12-B. Coating samples are considered hazardous materials; appropriate shipping procedures should be followed.

#### *9. Quality Control*

9.1 Laboratories using this method should operate a formal quality control program. The minimum requirements of the program should consist of an initial demonstration of laboratory capability and an ongoing analysis of blanks and quality control samples to evaluate and document quality data. The laboratory must maintain records to document the quality of the data generated. When results indicate atypical method performance, a quality control check standard (see Section 9.4) must be analyzed to confirm that the measurements were performed in an in-control mode of operation.

9.2 Before processing any samples, the analyst must demonstrate, through analysis of a reagent blank, that there are no interferences from the analytical system, glassware, and reagents that would bias the sample analysis results. Each time a set of analytical samples is processed or there is a change in reagents, a reagent blank should be processed as a safeguard against chronic laboratory contamination. The blank samples should be carried through all stages of the sample preparation and measurement steps.

9.3 Required instrument quality control parameters are found in the following sections:

9.3.1 Baseline stability must be demonstrated to be  $\leq 5$  percent of full scale using the procedures given in Section 10.1.

9.3.2 The GC calibration is not valid unless the retention time (RT) for each analyte at each concentration is within  $\pm 0.05$  min of the retention time measured for that analyte in the stock standard.

9.3.3 The retention time (RT) of any sample analyte must be within  $\pm 0.05$  min of the average RT of the analyte in the calibration standards for the analyte to be considered tentatively identified.

9.3.4 The GC system must be calibrated as specified in Section 10.2.

9.3.5 A one-point daily calibration check must be performed as specified in Section 10.3.

9.4 To establish the ability to generate results having acceptable accuracy and precision, the analyst must perform the following operations.

9.4.1 Prepare a quality control check standard (QCCS) containing each analyte expected in the coating samples at a concentration expected to result in a response between 25 percent and 75 percent of the limits of the calibration curve when the sample is prepared as described in Section 11.5. The QCCS may be prepared from reference standard materials or purchased as certified solutions. If prepared in the laboratory, the QCCS must be prepared independently from the calibration standards.

9.4.2 Analyze three aliquots of the QCCS according to the method beginning in Section 11.5.3 and calculate the weight percent of each analyte using Equation 1, Section 12.

9.4.3 Calculate the mean weight percent ( $\bar{X}$ ) for each analyte from the three results obtained in Section 9.4.2.

9.4.4 Calculate the percent accuracy for each analyte using the known concentrations ( $T_i$ ) in the QCCS using Equation 3, Section 12.

9.4.5 Calculate the percent relative standard deviation (percent RSD) for each analyte using Equation 7, Section 12, substituting the appropriate values for the relative response factors (RRF's) in said equation.

9.4.6 If the percent accuracy (Section 9.4.4) for all analytes is within the range 90 percent to 110 percent and the percent RSD (Section 9.4.5) for all analytes is  $\leq 20$  percent, system performance is acceptable and sample analysis may begin. If these criteria are not met for any analyte, then system performance is not acceptable for that analyte and the test must be repeated for those analytes only. Repeated failures indicate a general problem with the measurement system that must be located and corrected. In this case, the entire test, beginning at Sec-

tion 9.4.1, must be repeated after the problem is corrected.

9.5 Great care must be exercised to maintain the integrity of all standards. It is recommended that all standards be stored at  $-10$  °C to  $0$  °C in screw-cap amber glass bottles with Teflon liners.

9.6 Unless otherwise specified, all weights are to be recorded within 0.1 mg.

#### 10. Calibration and Standardization.

10.1 Column Baseline Drift. Before each calibration and series of determinations and before the daily calibration check, condition the column using procedures developed by the laboratory or as specified by the column supplier. Operate the GC at initial (i.e., before sample injection) conditions on the lowest attenuation to be used during sample analysis. Adjust the recorder pen to zero on the chart and obtain a baseline for at least one minute. Initiate the GC operating cycle that would be used for sample analysis. On the recorder chart, mark the pen position at the end of the simulated sample analysis cycle. Baseline drift is defined as the absolute difference in the pen positions at the beginning and end of the cycle in the direction perpendicular to the chart movement. Calculate the percent baseline drift by dividing the baseline drift by the chart width representing full-scale deflection and multiply the result by 100.

10.2 Calibration of GC. Bring all stock standards and calibration standards to room temperature while establishing the GC at the determined operating conditions.

10.2.1 Retention Times (RT's) for Individual Compounds.

NOTE: The procedures of this subsection are required only for the initial calibration. However, it is good laboratory practice to follow these procedures for some or all analytes before each calibration. The procedures were written for chromatograms output to a strip chart recorder. More modern instruments (e.g., integrators and electronic data stations) determine and print out or display retention times automatically.

The RT for each analyte should be determined before calibration. This provides a positive identification for each peak observed from the calibration standards. Inject an appropriate volume (see NOTE in Section 11.5.2) of one of the stock reference standards into the gas chromatograph and record on the chart the pen position at the time of the injection (see Section 7.6.1). Dilute an aliquot of the stock reference standard as required in dimethylformamide to achieve a concentration that will result in an on-scale response. Operate the gas chromatograph according to the determined procedures. Select the peak(s) that correspond to the analyte(s) [and internal standard, if used] and measure the retention time(s). If a chart recorder is

used, measure the distance(s) on the chart from the injection point to the peak maxima. These distances, divided by the chart speed, are defined as the RT's of the analytes in question. Repeat this process for each of the stock reference standard solutions.

NOTE: If gas chromatography with mass spectrometer detection (GC-MS) is used, a stock reference standard may contain a group of analytes, provided all analytes are adequately separated during the analysis. Mass spectral library matching can be used to identify the analyte associated with each peak in the gas chromatogram. The retention time for the analyte then becomes the retention time of its peak in the chromatogram.

10.2.2 Calibration. The GC must be calibrated using a minimum of three concentration levels of each potential analyte. (See Section 7.7 for instructions on preparation of the calibration standards.) Beginning with the lowest concentration level calibration standard, carry out the analysis procedure as described beginning in Section 11.7. Repeat the procedure for each progressively higher concentration level until all calibration standards have been analyzed.

10.2.2.1 Calculate the RT's for the internal standard and for each analyte in the calibration standards at each concentration level as described in Section 10.2.1. The RT's for the internal standard must not vary by more than 0.10 minutes. Identify each analyte by comparison of the RT's for peak maxima to the RT's determined in Section 10.2.1.

10.2.2.2 Compare the retention times (RT's) for each potential analyte in the calibration standards for each concentration level to the retention times determined in Section 10.2.1. The calibration is not valid unless all RT's for all analytes meet the criteria given in Section 9.3.2.

10.2.2.3 Tabulate the area responses and the concentrations for the internal standard and each analyte in the calibration standards. Calculate the response factor for the internal standard ( $RF_{is}$ ) and the response factor for each compound relative to the internal standard (RRF) for each concentration level using Equations 5 and 6, Section 12.

10.2.2.4 Using the RRF's from the calibration, calculate the percent relative standard deviation (percent RSD) for each analyte in the calibration standard using Equation 7, Section 12. The percent RSD for each individual calibration analyte must be less than 15 percent. This criterion must be met in order for the calibration to be valid. If the criterion is met, the mean RRF's determined above are to be used until the next calibration.

10.3 Daily Calibration Checks. The calibration curve (Section 10.2.2) must be checked and verified at least once each day that samples are analyzed. This is accom-

plished by analyzing a calibration standard that is at a concentration near the midpoint of the working range and performing the checks in Sections 10.3.1, 10.3.2, and 10.3.3.

10.3.1 For each analyte in the calibration standard, calculate the percent difference in the RRF from the last calibration using Equation 8, Section 12. If the percent difference for each calibration analyte is less than 10 percent, the last calibration curve is assumed to be valid. If the percent difference for any analyte is greater than 5 percent, the analyst should consider this a warning limit. If the percent difference for any one calibration analyte exceeds 10 percent, corrective action must be taken. If no source of the problem can be determined after corrective action has been taken, a new three-point (minimum) calibration must be generated. This criterion must be met before quantitative analysis begins.

10.3.2 If the  $RF_{is}$  for the internal standard changes by more than  $\pm 20$  percent from the last daily calibration check, the system must be inspected for malfunctions and corrections made as appropriate.

10.3.3 The retention times for the internal standard and all calibration check analytes must be evaluated. If the retention time for the internal standard or for any calibration check analyte changes by more than 0.10 min from the last calibration, the system must be inspected for malfunctions and corrections made as required.

## 11. Procedure

11.1 All samples and standards must be allowed to warm to room temperature before analysis. Observe the given order of ingredient addition to minimize loss of volatiles.

11.2 Bring the GC system to the determined operating conditions and condition the column as described in Section 10.1.

NOTE: The temperature of the injection port may be an especially critical parameter. Information about the proper temperature may be found on the CPDS.

11.3 Perform the daily calibration checks as described in Section 10.3. Samples are not to be analyzed until the criteria in Section 10.3 are met.

11.4 Place the as-received coating sample on a paint shaker, or similar device, and shake the sample for a minimum of 5 minutes to achieve homogenization.

11.5 NOTE: The steps in this section must be performed rapidly and without interruption to avoid loss of volatile organics. These steps must be performed in a laboratory hood free from solvent vapors. All weights must be recorded to the nearest 0.1 mg.

11.5.1 Add 16 g of dimethylformamide to each of two tared vials (A and B) capable of being septum sealed.

11.5.2 To each vial add a weight of coating that will result in the response for the major

constituent being in the upper half of the linear range of the calibration curve.

NOTE: The magnitude of the response obviously depends on the amount of sample injected into the GC as specified in Section 11.8. This volume must be the same as used for preparation of the calibration curve, otherwise shifts in compound retention times may occur. If a sample is prepared that results in a response outside the limits of the calibration curve, new samples must be prepared; changing the volume injected to bring the response within the calibration curve limits is not permitted.

11.5.3 Add a weight of internal standard to each vial (A and B) that will result in the response for the internal standard being between 25 percent and 75 percent of the linear range of the calibration curve.

11.5.4 Seal the vials with crimp-on or Mininert® septum seals.

11.6 Shake the vials containing the prepared coating samples for 60 seconds. Allow the vials to stand undisturbed for ten minutes. If solids have not settled out on the bottom after 10 minutes, then centrifuge at 1,000 rpm for 5 minutes. The analyst also has the option of injecting the sample without allowing the solids to settle.

11.7 Analyses should be conducted in the following order: daily calibration check sample, method blank, up to 10 injections from sample vials (*i.e.*, one injection each from up to five pairs of vials, which corresponds to analysis of 5 coating samples).

11.8 Inject the prescribed volume of supernatant from the calibration check sample, the method blank, and the sample vials onto

the chromatographic column and record the chromatograms while operating the system under the specified operating conditions.

NOTE: The analyst has the option of injecting the unseparated sample.

## 12. Data Analysis and Calculations

12.1 Qualitative Analysis. An analyte (*e.g.*, those cited in Section 1.1) is considered tentatively identified if two criteria are satisfied: (1) elution of the sample analyte within  $\pm 0.05$  min of the average GC retention time of the same analyte in the calibration standard; and (2) either (a) confirmation of the identity of the compound by spectral matching on a gas chromatograph equipped with a mass selective detector or (b) elution of the sample analyte within  $\pm 0.05$  min of the average GC retention time of the same analyte in the calibration standard analyzed on a dissimilar GC column.

12.1.1 The RT of the sample analyte must meet the criteria specified in Section 9.3.3.

12.1.2 When doubt exists as to the identification of a peak or the resolution of two or more components possibly comprising one peak, additional confirmatory techniques (listed in Section 12.1) must be used.

12.2 Quantitative Analysis. When an analyte has been identified, the quantification of that compound will be based on the internal standard technique.

12.2.1 A single analysis consists of one injection from each of two sample vials (A and B) prepared using the same coating. Calculate the concentration of each identified analyte in the sample as follows:

$$\text{HAP}_{\text{wt}\%} = 100 \times \frac{(A_x)(W_{\text{is}})}{(A_{\text{is}})(\overline{\text{RRF}}_x)(W_x)} \quad \text{Eq. (1)}$$

where:

$\text{HAP}_{\text{wt}\%}$  = weight percent of the analyte in coating.

$A_x$  = Area response of the analyte in the sample.

$W_{\text{is}}$  = Weight of internal standard added to sample, g.

$A_{\text{is}}$  = Area response of the internal standard in the sample.

$\overline{\text{RRF}}_x$  = Mean relative response factor for the analyte in the calibration standards.

$W_x$  = Weight of coating added to the sample solution, g.

12.2.2 Report results for duplicate analysis (sample vials A and B) without correction.

12.3 Precision Data. Calculate the percent difference between the measured concentrations of each analyte in vials A and B as follows.

12.3.1 Calculate the weight percent of the analyte in each of the two sample vials as described in Section 12.2.1.

12.3.2 Calculate the percent difference for each analyte as:

$$\% \text{Dif}_i = 100 \times \frac{|A_i - B_i|}{\frac{(A_i + B_i)}{2}} \quad \text{Eq. (2)}$$

where  $A_i$  and  $B_i$  are the measured concentrations of the analyte in vials A and B.

12.4 Calculate the percent accuracy for analytes in the QCCS (See Section 9.4) as follows:

$$\% \text{Accuracy}_x = 100 \times \frac{\bar{X}_x}{T_x} \quad \text{Eq. (3)}$$

where  $X_x$  is the mean measured value and  $T_x$  is the known true value of the analyte in the QCCS.

12.5 Obtain retention times (RT's) from data station or integrator or, for chromatograms from a chart recorder, calculate the RT's for analytes in the calibration standards (See Section 10.2.2.2) as follows:

$$\text{RT} = \frac{\text{Distance from injection to peak maximum}}{\text{Recorder chart speed}} \quad \text{Eq. (4)}$$

12.6 Calculate the response factor for the internal standard (See Section 10.2.2.3) as follows:

$$\text{RF}_{is} = \frac{A_{is}}{C_{is}} \quad \text{Eq. (5)}$$

where:

$A_{is}$  = Area response of the internal standard.

$C_{is}$  = Weight percent of the internal standard.

12.7 Calculate the relative response factors for analytes in the calibration standards (See Section 10.2.2.3) as follows:

where:

$$\text{RRF}_x = \frac{A_x}{\text{RF}_{is} C_x} \quad \text{Eq. (6)}$$

$\text{RRF}_x$  = Relative response factor for an individual analyte.

$A_x$  = Area response of the analyte being measured.

$C_x$  = Weight percent of the analyte being measured.

12.8 Calculate the percent relative standard deviation of the relative response factors for analytes in the calibration standards (See Section 10.2.2.4) as follows:

$$\% \text{RSD} = 100 \times \frac{\sqrt{\frac{\sum_{i=1}^n (\text{RRF}_x - \overline{\text{RRF}_x})^2}{n-1}}}{\overline{\text{RRF}_x}} \quad \text{Eq. (7)}$$

where:

$n$  = Number of calibration concentration levels used for an analyte.

$\text{RRF}_x$  = Individual RRF for an analyte.

$\overline{\text{RRF}_x}$  = Mean of all RRF's for an analyte.

12.9 Calculate the percent difference in the relative response factors between the calibration curve and the daily calibration checks (See Section 10.3) as follows:

$$\% \text{ Difference} = \frac{|\overline{\text{RRF}}_x - \text{RRF}_c|}{\overline{\text{RRF}}_x} \times 100 \quad \text{Eq. (8)}$$

where:

$\overline{\text{RRF}}$  = mean relative response factor from last calibration.

RRF = relative response factor from calibration check standard.

13. *Measurement of Reaction Byproducts That are HAP. [Reserved]*

14. *Method Performance. [Reserved]*

15. *Pollution Prevention. [Reserved]*

16. *Waste Management*

16.1 The coating samples and laboratory standards and reagents may contain compounds which require management as hazardous waste. It is the laboratory's responsibility to ensure all wastes are managed in accordance with all applicable laws and regulations.

16.2 To avoid excessive laboratory waste, obtain only enough sample for laboratory analysis.

16.3 It is recommended that discarded waste coating solids, used rags, used paper towels, and other nonglass or nonsharp waste materials be placed in a plastic bag before disposal. A separate container, designated "For Sharp Objects Only," is recommended for collection of discarded glassware and other sharp-edge items used in the laboratory. It is recommended that unused or excess samples and reagents be placed in a solvent-resistant plastic or metal container with a lid or cover designed for flammable liquids. This container should not be stored in the area where analytical work is performed. It is recommended that a record be kept of all compounds placed in the container for identification of the contents upon disposal.

17. *References*

1. Clean Air Act Amendments, Public Law 101-549, Titles I-XI, November, 1990.

2. Standard Test Method for Water Content of Water-Reducible Paints by Direct Injection into a Gas Chromatograph. ASTM Designation D3792-79.

3. Standard Practice for Sampling Liquid Paints and Related Pigment Coatings. ASTM Designation D3925-81.

4. Standard Test Method for Determination of Dichloromethane and 1,1,1-Trichloroethane in Paints and Coatings by Direct Injection into a Gas Chromatograph. ASTM Designation D4457-85.

5. Standard Test Method for Determining the Unreacted Monomer Content of Latexes Using Capillary Column Gas Chromatography. ASTM Designation D4827-93.

6. Standard Test Method for Determining Unreacted Monomer Content of Latexes Using Gas-Liquid Chromatography. ASTM Designation D 4747-87.

7. Method 301—"Field Validation of Pollutant Measurement Methods from Various Waste Media," 40 CFR 63, Appendix A.

8. "Reagent Chemicals, American Chemical Society Specifications," American Chemical Society, Washington, DC. For suggestions on the testing of reagents not listed by the American Chemical Society, see "Reagent Chemicals and Standards" by Joseph Rosin, D. Van Nostrand Co., Inc., New York, NY and the "United States Pharmacopeia."

18. *Tables, Diagrams, Flowcharts, and Validation Data*

Agency: \_\_\_\_\_  
 Inspector: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_  
 Sample ID#: \_\_\_\_\_  
 Source ID: \_\_\_\_\_  
 Coating Name/Type: \_\_\_\_\_  
 Plant Witness: \_\_\_\_\_  
 Type Analysis Required: \_\_\_\_\_  
 Special Handling: \_\_\_\_\_

Sample Container Label

Coating Data

Date: \_\_\_\_\_  
 Source: \_\_\_\_\_

| Data  | Sample ID No. | Sample ID No. |
|---|---------------|---------------|
| Coating:  |               |               |
| Supplier Name .....                             | .....         | .....         |
| Name and Color of Coating .....                 | .....         | .....         |
| Type of Coating (primer, clearcoat, etc.) ..... | .....         | .....         |
| Identification Number for Coating .....         | .....         | .....         |
| Coating Density (lbs/gal) .....                 | .....         | .....         |

| Data  | Sample ID No. | Sample ID No. |
|---|---------------|---------------|
| Total Volatiles Content (wt percent) .....                    | .....         | .....         |
| Water Content (wt percent) .....                              | .....         | .....         |
| Exempt Solvents Content (wt percent) .....                    | .....         | .....         |
| VOC Content (wt percent) .....                                | .....         | .....         |
| Solids Content (vol percent) .....                            | .....         | .....         |
| Diluent Properties:   |               |               |
| Name:   |               |               |
| Identification Number .....                                   | .....         | .....         |
| Diluent Solvent Density (lbs/gal) .....                       | .....         | .....         |
| VOC Content (wt percent) .....                                | .....         | .....         |
| Water Content (wt percent) .....                              | .....         | .....         |
| Exempt Solvent Content (wt percent) .....                     | .....         | .....         |
| Diluent/Solvent Ratio (gal diluent solvent/gal coating) ..... | .....         | .....         |

Stock Reference Standard

Name of Reference Material: \_\_\_\_\_  
 Supplier Name: \_\_\_\_\_  
 Lot Number: \_\_\_\_\_  
 Purity: \_\_\_\_\_  
 Name of Solvent Material: \_\_\_\_\_  
*Dimethylformamide* \_\_\_\_\_  
 Supplier Name: \_\_\_\_\_  
 Lot Number: \_\_\_\_\_  
 Purity: \_\_\_\_\_  
 Date Prepared: \_\_\_\_\_  
 Prepared By: \_\_\_\_\_  
 Notebook/page no.: \_\_\_\_\_

PREPARATION INFORMATION—Continued

7. Corrected Weight of Reference Material (line 6 times purity). \_\_\_\_\_,g  
 8. Fraction Reference Material in Standard (Line 7 ÷ Line 5) soln. \_\_\_\_\_,g/g  
 9. Total Volume of Standard Solution. \_\_\_\_\_, ml  
 10. Weight Reference Material per ml of Solution (Line 7 ÷ Line 9). \_\_\_\_\_,g/ml  
 Laboratory ID No. for this Standard. \_\_\_\_\_  
 Expiration Date for this Standard. \_\_\_\_\_

PREPARATION INFORMATION

1. Weight Empty Flask ..... \_\_\_\_\_,g  
 2. Weight Plus DMF ..... \_\_\_\_\_,g  
 3. Weight Plus Reference Material. \_\_\_\_\_,g  
 4. Weight After Made to Volume. \_\_\_\_\_,g  
 5. Weight DMF (lines 2–1+3–4). \_\_\_\_\_,g  
 6. Weight Ref. Material (lines 3–2). \_\_\_\_\_,g

CALIBRATION STANDARD

Date Prepared: \_\_\_\_\_  
 Date Expires: \_\_\_\_\_  
 Prepared By: \_\_\_\_\_  
 Notebook/page: \_\_\_\_\_  
 Calibration Standard Identification No.: \_\_\_\_\_  
 Final Weight Flask Plus Reagents. \_\_\_\_\_, g  
 Weight Empty Flask ..... \_\_\_\_\_, g  
 Total Weight Of Reagents \_\_\_\_\_, g



**Environmental Protection Agency**

**Pt. 63, App. A**

Quality Control Check Standard

Date Prepared: \_\_\_\_\_  
Date Expires: \_\_\_\_\_  
Prepared By: \_\_\_\_\_  
Notebook/page: \_\_\_\_\_  
Quality Control Check Standard Identifica-  
tion No.: \_\_\_\_\_

\_\_\_\_\_

PREPARATION INFORMATION

Final Weight Flask Plus \_\_\_\_\_g  
Reagents.  
Weight Empty Flask ..... \_\_\_\_\_g  
Total Weight Of Reagents \_\_\_\_\_g



**Environmental Protection Agency**

**Pt. 63, App. A**

Quality Control Check Standard Analysis  
Date OCCS Analyzed: \_\_\_\_\_

OCCS Identification No. \_\_\_\_\_  
Analyst: \_\_\_\_\_  
QCC Expiration Date: \_\_\_\_\_





PART 3.—DATA ANALYSIS FOR CALIBRATION STANDARDS

| Analyte  | Calib. STD ID | Calib. STD ID | Calib. STD ID | Mean  | percent RSD of RF | Is RT within $\pm 0.05$ min of RT for stock? (Y/N) | Is percent RSD $\leq 30\%$ (Y/N) |
|----------|---------------|---------------|---------------|-------|-------------------|--|----------------------------------|
| Name: RT | .....         | .....         | .....         | ..... | .....             | .....  | .....                            |
| RF       | .....         | .....         | .....         | ..... | .....             | .....  | .....                            |
| Name: RT | .....         | .....         | .....         | ..... | .....             | .....  | .....                            |
| RF       | .....         | .....         | .....         | ..... | .....             | .....  | .....                            |
| Name: RT | .....         | .....         | .....         | ..... | .....             | .....  | .....                            |
| RF       | .....         | .....         | .....         | ..... | .....             | .....  | .....                            |
| Name: RT | .....         | .....         | .....         | ..... | .....             | .....  | .....                            |
| RF       | .....         | .....         | .....         | ..... | .....             | .....  | .....                            |
| Name: RT | .....         | .....         | .....         | ..... | .....             | .....  | .....                            |
| RF       | .....         | .....         | .....         | ..... | .....             | .....  | .....                            |
| Name: RT | .....         | .....         | .....         | ..... | .....             | .....  | .....                            |
| RF       | .....         | .....         | .....         | ..... | .....             | .....  | .....                            |
| Name: RT | .....         | .....         | .....         | ..... | .....             | .....  | .....                            |
| RF       | .....         | .....         | .....         | ..... | .....             | .....  | .....                            |



[57 FR 61992, Dec. 29, 1992, as amended at 58 FR 57924, Oct. 27, 1993; 59 FR 1992, Jan. 13, 1994; 59 FR 19590, Apr. 22, 1994; 59 FR 61816, Dec. 2, 1994; 60 FR 4979, Jan. 25, 1995; 60 FR 33122, 33123, June 27, 1995; 60 FR 62952, Dec. 7, 1995]

#### APPENDIX B TO PART 63—SOURCES DEFINED FOR EARLY REDUCTION PROVISIONS

| Source   | Location of definition  |
|--|---|
| 1. Organic Process Equipment in Volatile Hazardous Air Pollutant Service at Chemical Plants and Other Designated Facilities. | 56 FR 9315, March 6, 1991, Announcement of Negotiated Rule-making |
| a. All valves in gas or light liquid service within a process unit   |   |
| b. All pumps in light liquid service within a process unit   |   |
| c. All connectors in gas or light liquid service within a process unit   |   |
| d. Each compressor   |   |
| e. Each product accumulator vessel   |   |
| f. Each agitator   |   |
| g. Each pressure relief device   |   |
| h. Each open-ended valve or line   |   |
| i. Each sampling connection system   |   |
| j. Each instrumentation system   |   |
| k. Each pump, valve, or connector in heavy liquid service  |   |
| l. Each closed vent system and control device  |   |

#### APPENDIX C TO PART 63—DETERMINATION OF THE FRACTION BIODEGRADED ( $F_{bio}$ ) IN A BIOLOGICAL TREATMENT UNIT

##### I. Purpose

The purpose of this appendix is to define the procedures for an owner or operator to use to calculate the site specific fraction of organic compounds biodegraded ( $F_{bio}$ ) in a biological treatment unit. If an acceptable level of organic compounds is destroyed rather than emitted to the air or remaining in the effluent, the biological treatment unit may be used to comply with the applicable treatment requirements without the unit being covered and vented through a closed vent system to an air pollution control device.

The determination of  $F_{bio}$  shall be made on a system as it would exist under the rule. The owner or operator should anticipate changes that would occur to the wastewater flow and concentration of organics, to be treated by the biological treatment unit, as

a result of enclosing the collection and treatment system as required by the rule.

##### II. Definitions

Biological treatment unit = wastewater treatment unit designed and operated to promote the growth of bacteria and other factors to destroy organic materials in wastewater.

$f_{bio}$  = The fraction of individual applicable organic compounds in the wastewater biodegraded in a biological treatment unit.

$F_{bio}$  = The fraction of total applicable organic compounds in the wastewater biodegraded in a biological treatment unit.

$F_e$  = The fraction of applicable organic compounds emitted from the wastewater to the atmosphere.

$K_1$  = First order biodegradation rate constant, L/g bio-hr.

$KL$  = liquid-phase mass transfer coefficient, m/s.

$M$  = compound specific mass flow weighted average of organic compounds in the wastewater, Mg/Yr.

##### III. Procedures for Determination of $f_{bio}$

The first step in the analysis to determine if a biological treatment unit may be used without being covered and vented through a closed vent system to an air pollution control device, is to determine the compound specific  $f_{bio}$ . The following 3 procedures may be used to determine  $f_{bio}$ :

(1) EPA Test Method 304A or 304B (Appendix C, Part 63)—Method for the Determination of Biodegradation Rates of Organic Compounds,

(2) Performance data with and without biodegradation,

(3) Inlet and outlet concentration measurements. All procedures must be executed so that the resulting  $F_{bio}$  based on the collection system and waste management units being in compliance with the regulation. If the collection system and waste management units meet the suppression requirements at the time of the performance test, any of the three procedures may be chosen. If the collection system and waste management units are not in compliance at the time of the performance test, then only Method 304A or 304B shall be chosen.

Select the appropriate procedure from the three listed above based on the availability of site specific data. If the facility does not have site specific data on the removal efficiency of their biological treatment unit, then Procedure 1 may be used. Procedure 1 allows the use of a bench scale reactor to determine the first order biodegradation rate constant. Procedure 3 would be used if the facility has, or measures to determine, data on the inlet and outlet individual organic compound concentration for the biological

treatment unit. Procedure 2 is used if a facility has performance data on a biotreatment unit prior to and after addition of the microbial mass. An example where Procedure 2 could be used is, an activated sludge unit where measurements have been taken on inlet and exit concentration of organic compounds in the wastewater prior to seeding with the microbial mass and start up of the unit. The flow chart listed in Figure 1 outlines the steps to use for each of the procedures.

#### A. Method 304A or 304B (Procedure 1)

If the first procedure is selected, follow the instructions in Appendix C of part 63 Method 304A "Method for the Determination of Biodegradation Rates of Organic Compounds (Vented Option)" or Method 304B "Method for the Determination of Biodegradation Rates of Organic Compounds (Scrubber Option)". Method 304A or 304B provides instruction on setting up and operating a self-contained benchtop bioreactor system which is operated under conditions representative of the target full-scale system. Method 304A uses a benchtop bioreactor system with a vent, and uses modeling to estimate any air emissions. Method 304B uses a benchtop bioreactor system which is equipped with a scrubber and is not vented.

There are some restrictions on which method a source may use. If the facility is measuring the rate of biodegradation of compounds that may tend to react or hydrolyze in the scrubber of Method 304B, this method shall not be used and Method 304A is the required method. If a Henry's law value is not available to use with Form V, then Method 304A shall not be used and Method 304B is the required method. When using either method, the feed flow to the benchtop bioreactor shall be representative of the flow and concentration of the wastewater that will be treated by the full scale biological treatment unit after the collection and treatment system has been enclosed as required under the applicable subpart.

The conditions under which Method 304A or 304B is run establishes the operating parameters of the full scale biological treatment unit. If the biological treatment unit is operated at a non-steady state for example, varying dissolved oxygen, mixed liquor suspended solids, temperature, or other critical parameters, the Agency believes this will adversely affect the biodegradation rate and is an unacceptable treatment option. If the variation in operating parameters is due to seasonal changes or process changes, the facility shall conduct the test method at these different parameters and show the system is achieving the acceptable level of control as required by the regulation. The facility would be making multiple runs of the test method to establish an acceptable operating

range for its biological treatment unit. For wide ranges of variation in operating parameters, the facility shall demonstrate the biological treatment unit is achieving an acceptable level of control, as required by the regulation, across the range and not only at the endpoints.

If Method 304A is used, complete Form V initially. Form V is used to calculate K1 from the Method 304A results. Form V uses the Henry's law constant to estimate the fraction lost from the benchtop reactor vent. The owner or operator shall use the Henry's law values in Table I. Form V also gives direction for calculating an equivalent KL. Note on Form V if the calculated number for line 11 is greater than the calculated value for line 13, this procedure shall not be used to demonstrate the compound is biodegradable. If line 11 is greater than line 13, this is an indication the fraction emitted from the vent is greater than the fraction biodegraded. The equivalent KL determined on Form V is used in Form II (line 6). Estimation of the Fe and  $f_{bio}$  must be done following the steps in Form III. Form III uses the previously calculated values of K1 and KL (equivalent KL), and site specific parameters of the full scale bioreactor as input to the calculations. Forms II, III, and V must be completed for each organic compound in the wastewater to determine Fe and  $f_{bio}$ .

If Method 304B is used, perform the method and use the measurements to determine K1, which is the first order biodegradation rate constant. Form I lists the sequence of steps in the procedure for calculating K1 from the Method 304B results. Once K1 is determined, KL must be calculated by use of mass transfer equations. Form II outlines the procedure to follow for use of mass transfer equations to determine KL. Because of the complexity of these equations, a computer program which incorporates these mass transfer equations may be used. Water7 is a program that incorporates these mass transfer equations and may be used to determine KL. Refer to Form II-A to determine KL, if Water7 or the most recent update to this model is used. The Bay Area Sewage Toxics Emission (BASTE) model and the TOXCHEM (Environment Canada's Wastewater Technology Centre and Environmega, Ltd.) model may also be used with several stipulations. The programs must be altered to output a KL value which is based on the site specific parameters of the unit modeled, and the Henry's law values listed in Table I must be substituted for the existing Henry's law values in the programs. Input values used in the model and corresponding output values shall become documentation of the  $f_{bio}$  determination. The owner or operator should be aware these programs do not allow modeling of certain units. To model these units, the owner

or operator shall use one of the other appropriate procedures as outlined in this appendix. The owner or operator shall not use a default value for KL. The KL value determined by use of these models shall be based on the site specific parameters of the specific unit. This KL value shall be inserted in Form II (line 6). Estimation of the Fe and  $f_{\text{bio}}$  must be done following the steps in Form III. Form III uses the previously calculated values of K1 and KL, and site specific parameters of the full scale bioreactor as input to the calculations. Forms I, II, and III must be completed for each organic compound in the wastewater to determine Fe and  $f_{\text{bio}}$ .

#### B. Performance Data With and Without Biodegradation (Procedure 2)

Procedure 2 uses site specific performance data that represents or characterizes operation of the unit both with and without biodegradation. As previously mentioned, proper determination of  $f_{\text{bio}}$  must be made on a system as it would exist under the rule. Using Form IV, calculate KL and K1. After KL and K1 are determined, Form III is used to calculate Fe and  $f_{\text{bio}}$  for each organic compound present in the wastewater.

#### C. Inlet and Outlet Concentration Measurements (Procedure 3)

Procedure 3 uses measured inlet and outlet organic compound concentrations for the unit. Again, proper determination of  $f_{\text{bio}}$  must be made on a system as it would exist under the rule. The first step in using this procedure is to calculate KL using Form II. Again because of the complexity of the calculations, a computer model may be used. If the Water7 model or the most recent update to this model is used, then use Form II-A to calculate KL. After KL is determined using

field data, complete Form VI to calculate K1. The TOXCHEM or BASTE model may also be used to calculate KL, with the stipulations listed in procedure 304B. After KL and K1 are determined, Form III is used to calculate Fe and  $f_{\text{bio}}$  for each organic compound.

#### IV. Calculation of $F_{\text{bio}}$

At this point, the individual  $f_{\text{bio}}$ 's determined by the previously explained procedures must be summed to obtain the total  $f_{\text{bio}}$ . To determine the  $F_{\text{bio}}$  multiply each compound specific  $f_{\text{bio}}$  by the compound specific average mass flow rate of the organic compound in the wastewater stream (see regulation for instruction on calculation of average mass flow rate). Sum these products and divide by the total wastewater stream average mass flow rate of organic compounds.

$$F_{\text{bio}} = \frac{\sum_{i=1}^n (f_{\text{bio}_i} \times M_i)}{\sum_{i=1}^n M_i}$$

M=compound specific average mass flow rate of the organic compounds in the wastewater(Mg/Yr)

n=number of organic compounds in the wastewater

The  $F_{\text{bio}}$  is then used in the applicable compliance equations in the regulation to determine if biodegradation may be used to comply with the treatment standard without covering and venting to an air pollution control device.

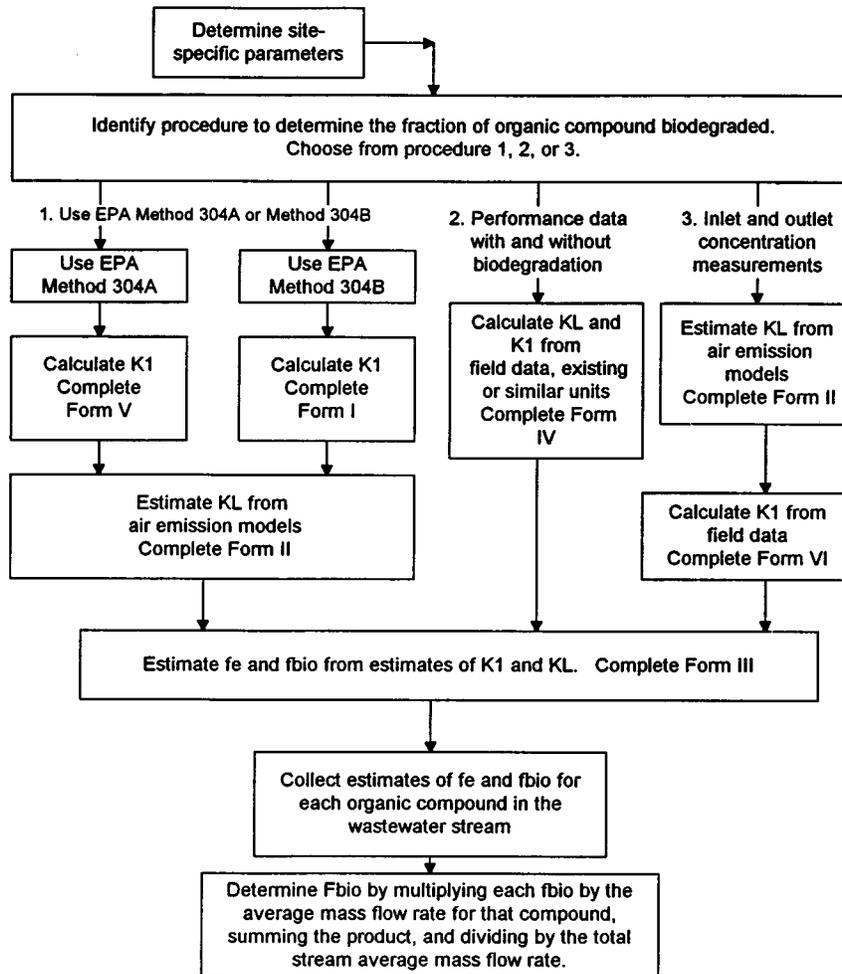


Figure 1. ALTERNATIVE METHODS FOR DETERMINING THE FRACTION OF ORGANIC COMPOUND BIODEGRADED (Fbio) IN A BIOLOGICAL TREATMENT UNIT

TABLE I

|    | Compound                | $H_L$ @ 25°C<br>(atm / mole<br>frac) | $H_L$ @ 100°C<br>(atm / mole<br>frac) |
|----|-------------------------|--------------------------------------|---------------------------------------|
| 1  | Acetaldehyde            | 4.87e+00                             | 5.64e+01                              |
| 3  | Acetonitrile            | 1.11e+00                             | 1.78e+01                              |
| 4  | Acetophenone            | 5.09e-01                             | 2.25e+01                              |
| 5  | Acrolein                | 4.57e+00                             | 6.61e+01                              |
| 8  | Acrylonitrile           | 5.45e+00                             | 6.67e+01                              |
| 9  | Allyl chloride          | 5.15e+02                             | 2.26e+03                              |
| 10 | Aniline                 | 9.78e-02                             | 1.42e+00                              |
| 12 | Benzene                 | 3.08e+02                             | 1.93e+03                              |
| 14 | Benzyl chloride         | 1.77e+01                             | 2.88e+02                              |
| 15 | Biphenyl                | 2.27e+01                             | 1.27e+03                              |
| 17 | Bromoform               | 2.96e+01                             | 3.98e+02                              |
| 18 | 1,3-Butadiene           | 3.96e+03                             | 1.56e+04                              |
| 20 | Carbon disulfide        | 1.06e+03                             | 3.60e+03                              |
| 21 | Carbon tetrachloride    | 1.68e+03                             | 1.69e+04                              |
| 23 | 2-Chloroacetophenone    | 4.84e-02                             | 1.43e+01                              |
| 24 | Chlorobenzene           | 2.09e+02                             | 3.12e+03                              |
| 25 | Chloroform              | 2.21e+02                             | 1.34e+03                              |
| 26 | Chloroprene             | 5.16e+01                             | 1.74e+02                              |
| 29 | o-Cresol                | 9.12e-02                             | 2.44e+01                              |
| 31 | Cumene                  | 7.28e+02                             | 7.15e+03                              |
| 32 | 1,4-Dichlorobenzene (p) | 1.76e+02                             | 1.95e+03                              |
| 33 | Dichloroethyl ether     | 1.14e+00                             | 3.57e+01                              |
| 34 | 1,3-Dichloropropene     | 1.97e+02                             | 1.44e+03                              |
| 36 | N,N-Dimethylaniline     | 7.70e-01                             | 5.67e+02                              |
| 37 | Diethyl sulfate         | 3.41e-01                             | 4.22e+01                              |
| 38 | 3,3'-Dimethylbenzidine  | 7.51e-05                             | 5.09e-01                              |
| 40 | 1,1-Dimethylhydrazine   | 9.11e-02                             | 1.57e+01                              |

|    | Compound  | H <sub>L</sub> @ 25°C<br>(atm / mole<br>frac) | H <sub>L</sub> @ 100°C<br>(atm / mole<br>frac) |
|----|---|---|--|
| 42 | Dimethyl sulfate                                  | 2.23e-01                                      | 1.43e+01                                       |
| 43 | 2,4-Dinitrophenol                                 | 2.84e-01                                      | 1.50e+02                                       |
| 44 | 2,4-Dinitrotoluene                                | 4.00e-01                                      | 9.62e+00                                       |
| 45 | 1,4-Dioxane                                       | 3.08e-01                                      | 9.53e+00                                       |
| 47 | Epichlorohydrin                                   | 1.86e+00                                      | 4.34e+01                                       |
| 48 | Ethyl acrylate                                    | 1.41e+01                                      | 3.01e+02                                       |
| 49 | Ethylbenzene                                      | 4.38e+02                                      | 4.27e+03                                       |
| 50 | Ethyl<br>chloride (chloroethane)                  | 6.72e+02                                      | 3.10e+03                                       |
| 51 | Ethylene dibromide                                | 3.61e+01                                      | 5.15e+02                                       |
| 52 | Ethylene<br>dichloride (1,2-Dichloroeth<br>ane)   | 6.54e+01                                      | 5.06e+02                                       |
| 54 | Ethylene oxide                                    | 1.32e+01                                      | 9.09e+01                                       |
| 55 | Ethylidene<br>dichloride (1,1-Dichloroeth<br>ane) | 3.12e+02                                      | 2.92e+03                                       |
| 57 | Ethylene glycol dimethyl<br>ether                 | 1.95e+00                                      | 4.12e+01                                       |
| 60 | Ethylene glycol monoethyl<br>ether acetate        | 9.86e-02                                      | 6.03e+00                                       |
| 62 | Ethylene glycol monomethyl<br>ether acetate       | 1.22e-01                                      | 6.93e+00                                       |
| 64 | Diethylene glycol dimethyl<br>ether               | 8.38e-02                                      | 4.69e+00                                       |
| 69 | Diethylene glycol diethyl<br>ether                | 1.19e-01                                      | 7.71e+00                                       |
| 72 | Ethylene glycol monobutyl<br>ether acetate        | 2.75e-01                                      | 2.50e+01                                       |
| 73 | Hexachlorobenzene                                 | 9.45e+01                                      | 2.57e+04                                       |
| 74 | Hexachlorobutadiene                               | 5.72e+02                                      | 6.92e+03                                       |
| 75 | Hexachloroethane                                  | 4.64e+02                                      | 7.49e+04                                       |
| 76 | Hexane  | 4.27e+04                                      | 9.44e+04                                       |

|     | Compound                                     | $H_L$ @ 25°C<br>(atm / mole<br>frac) | $H_L$ @ 100°C<br>(atm / mole<br>frac) |
|-----|--|--------------------------------------|---------------------------------------|
| 78  | Isophorone                                   | 3.68e-01                             | 1.68e+01                              |
| 80  | Methanol                                     | 2.89e-01                             | 7.73e+00                              |
| 81  | Methyl<br>bromide (Bromomethane)             | 3.81e+02                             | 2.12e+03                              |
| 82  | Methyl chloride<br>(Chloromethane)           | 4.90e+02                             | 2.84e+03                              |
| 83  | Methyl chloroform<br>(1,1,1-Trichloroethane) | 9.67e+02                             | 5.73e+03                              |
| 84  | Methyl ethyl ketone<br>(2-Butanone)          | 7.22e+00                             | 5.92e+01                              |
| 86  | Methyl isobutyl ketone<br>(Hexone)           | 2.17e+01                             | 3.72e+02                              |
| 88  | Methyl methacrylate                          | 7.83e+00                             | 9.15e+01                              |
| 89  | Methyl tert-butyl ether                      | 3.08e+01                             | 2.67e+02                              |
| 90  | Methylene chloride<br>(Dichloromethane)      | 1.64e+02                             | 9.15e+02                              |
| 93  | Naphthalene                                  | 2.68e+01                             | 7.10e+02                              |
| 94  | Nitrobenzene                                 | 1.33e+00                             | 2.80e+01                              |
| 96  | 2-Nitropropane                               | 6.61e+00                             | 8.76e+01                              |
| 99  | Phosgene                                     | 7.80e+02                             | 3.51e+03                              |
| 102 | Propionaldehyde                              | 3.32e+00                             | 1.42e+02                              |
| 103 | Propylene dichloride                         | 1.59e+02                             | 1.27e+03                              |
| 104 | Propylene oxide                              | 1.98e+01                             | 1.84e+02                              |
| 106 | Styrene                                      | 1.45e+02                             | 1.72e+03                              |
| 107 | 1,1,2,2-Tetrachloroethane                    | 1.39e+01                             | 1.99e+02                              |
| 108 | Tetrachloroethylene<br>(Perchloroethylene)   | 9.83e+02                             | 1.84e+04                              |
| 109 | Toluene                                      | 3.57e+02                             | 2.10e+03                              |
| 112 | o-Toluidine                                  | 1.34e-01                             | 1.15e+01                              |
| 113 | 1,2,4-Trichlorobenzene                       | 1.07e+02                             | 1.04e+03                              |
| 114 | 1,1,2-Trichloroethane                        | 4.58e+01                             | 5.86e+02                              |

|     | Compound                                      | $H_L$ @ 25°C<br>(atm / mole<br>frac) | $H_L$ @ 100°C<br>(atm / mole<br>frac) |
|-----|---|--------------------------------------|---------------------------------------|
| 115 | Trichloroethylene                             | 5.67e+02                             | 7.66e+03                              |
| 116 | 2,4,5-Trichlorophenol                         | 4.84e-01                             | 6.27e+01                              |
| 117 | Triethylamine                                 | 6.94e+00                             | 2.57e+02                              |
| 118 | 2,2,4-Trimethylpentane                        | 1.85e+05                             | 9.74e+05                              |
| 119 | Vinyl acetate                                 | 2.82e+01                             | 2.80e+02                              |
| 120 | Vinyl chloride                                | 1.47e+03                             | 6.45e+03                              |
| 121 | Vinylidene chloride<br>(1,1-Dichloroethylene) | 1.44e+03                             | 1.40e+04                              |
| 123 | m-Xylene                                      | 4.13e+02                             | 3.25e+03                              |
| 124 | o-Xylene                                      | 2.71e+02                             | 2.55e+03                              |
| 125 | p-Xylene                                      | 4.13e+02                             | 3.20e+03                              |

| Form I DATA FORM FOR THE ESTIMATION OF THE EPA METHOD 304B FIRST ORDER BIORATE CONSTANT  |    |  |          |
|--|----|--|----------|
| NAME OF THE FACILITY for site specific biorate determination   |    |  | Example  |
| COMPOUND for site specific biorate determination   |    |  | METHANOL |
| INLET CONCENTRATION used in EPA METHOD 304B  | 1  |  | 78       |
| EXIT CONCENTRATION measured by EPA METHOD 304B   | 2  |  | 6        |
| BIOMASS (g/L) This is the dried solids that are obtained from the mixed liquor suspended solids in the bench scale bioreactor.   | 3  |  | 0.075    |
| TEMPERATURE OF BIOREACTOR (deg. C)   | 4  |  | 35       |
| VOLUME of EPA METHOD 304B bench scale bioreactor (L)   | 5  |  | 6        |
| FLOW RATE of waste treated in the bench scale bioreactor (L/hr)  | 6  |  | 0.146    |
| CALCULATIONS FROM EPA METHOD 304B DATA MEASUREMENTS  |    |  |          |
| RESIDENCE TIME (hr) Divide the number on line 5 by the number on line 6 and enter the results here.                              | 7  |  | 41.10    |
| Concentration Decrease (g/m <sup>3</sup> ). Subtract the number on line 2 from the number on line 1 and enter the results here.  | 8  |  | 72.00    |
| BIORATE (g/m <sup>3</sup> -hr). Divide the number on line 8 by the number on line 7 and enter the results here.                  | 9  |  | 1.75     |
| Product of concentration and biomass. Multiply the number on line 2 by the number on line 3 and enter the results here.          | 10 |  | 0.45     |
| BIORATE K1 (L/g bio-hr) Divide the number on line 9 by the number on line 10 and enter the results here.                         | 11 |  | 3.89     |
| Temperature adjustment. Subtract 25 deg. C from the number on line 4 and enter the results here.                                 | 12 |  | 10       |
| Temperature adjustment factor. 1.046 is the default temperature adjustment factor. Enter the temperature adjustment factor here. | 13 |  | 1.046    |
| Biorate temperature ratio. Raise the number on line 13 to the power of the number on line 12.                                    | 14 |  | 1.567    |
| BIORATE K1 at 25 deg. C (L/g bio-hr) Divide the number on line 11 by the number on line 14 and enter the results here.           | 15 |  | 2.48     |

Note: With Monod kinetics, use  $K_{max} = 1000$  to convert the Monod kinetics to first order. If a different temperature adjustment factor than the default is entered on line 13, make sure that the adjustment factor used in the calculations agrees with the value entered on line 13.

| Form II PROCEDURES FORM FOR THE ESTIMATION OF THE KL FROM UNIT SPECIFICATIONS                                 |   |   |  |
|---|---|---|--|
| NAME OF THE FACILITY for site specific biorate determination  |   |   |  |
| NAME OF UNIT for site specific biorate determination  |   |   |  |
| NAME OF COMPOUND  |   |   |  |
| HENRY'S LAW constant for the compound (mole fraction in gas per mole fraction in water at 25 degrees Celsius) |   |   |  |
| IDENTIFY THE TYPE OF UNIT (check one box below)   |   |   |  |
|   | Quiescent impoundment   | 1 |  |
|   | Surface agitated impoundment  | 2 |  |
|   | Surface agitated impoundment with submerged air   | 3 |  |
|   | Unit agitated by submerged aeration gas   | 4 |  |
|   | EPA Method 304A, Covered unit, UNOX system, or bench scale reactor  | 5 |  |
| PROCEDURES BASED UPON THE TYPE OF UNIT  |   |   |  |
| UNIT  | PROCEDURE TO FOLLOW   |   |  |
| 1   | Use the quiescent impoundment model to determine KL. Use Kq as KL as determined from Form VII.  |   |  |
| 2   | Use the quiescent impoundment model to determine KL for the quiescent zone, Form VII. Use the aerated impoundment model to determine KL for the agitated surface, Form VIII.  |   |  |
| 3   | Use the quiescent impoundment model to determine Kq for the quiescent zone, Form VII. Use the aerated impoundment model to determine KL for the agitated surface, Form VIII. The total system KL is the sum of the KL from Form VIII and the equivalent KL from Form V. Use the submerged air rate as the vent rate in form V.  |   |  |
| 4   | Use the aerated impoundment model to determine KL if the surface is agitated. Use the quiescent impoundment model if the surface is not agitated. KL includes the effect of volatilization in the air discharge. See section 4.6.1 in the EMISSION MODEL REPORT (EPA-450/3-87-026). The total system KL is the sum of the KL from Form VIII and the equivalent KL from Form V. Use the submerged air rate as the vent rate in Form V. |   |  |
| 5   | KL for the surface is assumed to be equal zero. Determine equivalent KL based upon air discharge. Use Form V for EPA Method 304A or if the concentration in the vent is not measured. Use Form V-A if the concentration in the vent is measured.  |   |  |
| Estimate of KL obtained from above procedures (m/s)   |   | 6 |  |

| Form II-A  |   | PROCEDURES FORM FOR THE<br>ESTIMATION OF THE KL FROM WATER 7 |  |
|--|---|--|--|
| NAME OF THE FACILITY for site specific biorate determination |   |  |  |
| NAME OF UNIT for site specific biorate determination         |   |  |  |
| NAME OF COMPOUND   |   |  |  |
| HENRY'S LAW COMPOUND   |   |  |  |
| IDENTIFY THE TYPE OF UNIT                                    |   | (check one box below)  |  |
|  | Quiescent impoundment   | 1  |  |
|  | Surface agitated impoundment  | 2  |  |
|  | Surface agitated impoundment with submerged air   | 3  |  |
|  | Unit agitated by submerged aeration gas   | 4  |  |
|  | Covered unit, UNOX system, bench scale reactor  | 5  |  |
| PROCEDURES BASED UPON THE TYPE OF UNIT                       |   |  |  |
| unit   | procedure to follow   |  |  |
| 1  | Use the quiescent impoundment model to determine KL.  |  |  |
| 2  | Use the aerated impoundment model to determine KL for the combined agitated surfaces and quiescent surfaces.  |  |  |
| 3  | Use the aerated impoundment model to determine KL for the combined agitated surfaces and quiescent surfaces.  |  |  |
| 4  | Use the aerated impoundment model to determine KL if the surface is agitated. Use the quiescent impoundment model if the surface is not agitated. KL includes the effect of volatilization in the air discharge. See section 4.6.1 in the EMISSION MODEL REPORT (EPA-450/3-87-026). |  |  |
| 5  | KL for the surface is assumed to be equal zero. Select the covered unit option with the aerated impoundment model.  |  |  |

| Form III DATA FORM FOR THE ESTIMATION OF<br>THE COMPOUND FRACTION BIODEGRADED AND AIR EMISSIONS  |    |  |          |
|--|----|--|----------|
| NAME OF THE FACILITY for site specific biorate determination   |    |  | example  |
| COMPOUND for site specific biorate determination   |    |  | methanol |
| ESTIMATE OF K1 from Form I line 11, Form V line 15, Form V-A line 15, Form IV line 14, or Form VI line 13.<br>(L/g bio-hr)             | 1  |  | 3.89     |
| BIOMASS (g/L) This is the dried solids that are obtained from the mixed liquor suspended solids in the full-scale bioreactor.          | 2  |  | 2.4      |
| VOLUME of full-scale system (cubic meters)   | 3  |  | 2700     |
| AREA of the liquid surface of the full-scale system (square meters)  | 4  |  | 1500     |
| ESTIMATE OF KL from Form II or Form IV (m/s divided by 10 <sup>6</sup> )   | 5  |  | 4.95     |
| FLOW RATE of waste treated in full-scale bioreactor (m <sup>3</sup> /s)  | 6  |  | 0.1565   |
| CALCULATIONS FROM ESTIMATES OF K1 AND KL   |    |  |          |
| BIORATE (m <sup>3</sup> /s) Multiply the numbers on lines 1, 2, and 3 together and divide the results by 3600. Enter the results here. | 7  |  | 7.0020   |
| AIR STRIPPING (m <sup>3</sup> /s). Multiply the numbers on lines 4 and 5 together and divide by 1,000,000. Enter the results here.     | 8  |  | 0.0074   |
| EFFLUENT DISCHARGE (m <sup>3</sup> /s). Enter the number on line 6 here.   | 9  |  | 0.1565   |
| TOTAL of the three loss mechanisms. Add the numbers on lines 7, 8, and 9. Enter the results here.                                      | 10 |  | 7.1659   |
| Fraction biodegraded: Divide the number on line 7 by the number on line 10 and enter the results here.                                 | 11 |  | 0.9771   |
| Fraction air emissions: Divide the number on line 8 by the number on line 10 and enter the results here.                               | 12 |  | 0.0010   |
| Fraction remaining in unit effluent: Divide the number on line 9 by the number on line 10 and enter the results here.                  | 13 |  | 0.0218   |
| Total: add the numbers on lines 11, 12, and 13. The sum should equal 1.0   | 14 |  | 0.9999   |

| Form IV DATA FORM FOR THE ESTIMATION OF K1 AND KL<br>FROM FULL SCALE UNIT DATA WITH AND WITHOUT BIODEGRADATION   |    |  |           |
|--|----|--|-----------|
| NAME OF THE FACILITY for site specific biorate determination   |    |  | example   |
| COMPOUND for site specific biorate determination   |    |  | methanol  |
| BIOMASS (g/L) This is the dried solids that are obtained from the mixed liquor suspended solids in the full-scale bioreactor.  | 1  |  | 2.4       |
| VOLUME of full-scale system (cubic meters)   | 2  |  | 2700      |
| AREA of the liquid surface of the full-scale system (square meters)  | 3  |  | 1500      |
| INLET CONCENTRATION of compound (g/m <sup>3</sup> or ppmw)   | 4  |  | 133.5     |
| EXIT CONCENTRATION of compound (g/m <sup>3</sup> or ppmw)  | 5  |  | 10.57     |
| EXIT CONCENTRATION (NO BIODEGRADATION) of compound (g/m <sup>3</sup> or ppmw)  | 6  |  | 133       |
| FLOW RATE of waste treated in the full-scale bioreactor (m <sup>3</sup> /s)  | 7  |  | 0.1565    |
| ESTIMATES OF K1 AND KL FROM FIELD DATA WITH AND WITHOUT BIODEGRADATION   |    |  |           |
| REMOVAL WITH BIODEGRADATION (g/s) Subtract the number on line 5 from the number on line 4 and multiply the results by the number on line 7. Enter the results here.    | 8  |  | 19.2385   |
| REMOVAL WITHOUT BIODEGRADATION (g/s) Subtract the number on line 6 from the number on line 4 and multiply the results by the number on line 7. Enter the results here. | 9  |  | 0.0783    |
| KL A ESTIMATE (m <sup>3</sup> /s) Divide the number on line 9 by the number on line 6. Enter the results here.   | 10 |  | 0.0006    |
| K1 B V + KL A ESTIMATE (m <sup>3</sup> /s) Divide the number on line 8 by the number on line 5. Enter the results here.  | 11 |  | 1.8201    |
| K1 B V ESTIMATE (m <sup>3</sup> /s) Subtract the number on line 10 from the number on line 11. Enter the results here.   | 12 |  | 1.8195    |
| Product of B and V. Multiply the number on line 1 by the number on line 2 and enter the results here.  | 13 |  | 6,480.000 |
| K1 ESTIMATE (L/gbio-hr) Divide the number on line 12 by the number on line 13 and multiply by 3600 s/hr. Enter the results here.                                       | 14 |  | 1.0108    |
| KL ESTIMATE (m/s x 10 <sup>6</sup> ) Divide the number on line 10 by the number on line 3. Multiply the results by 1,000,000 and enter the product here.               | 15 |  | 0.4000    |

| Form V DATA FORM FOR THE ESTIMATION OF K1 FOR EPA METHOD 304A<br>OR FROM A COVERED, VENTED BIODEGRADATION UNIT.   |    |  |                 |
|---|----|--|-----------------|
| NAME OF THE FACILITY for site specific biorate determination  |    |  | example         |
| COMPOUND for site specific biorate determination  |    |  | <i>methanol</i> |
| BIOMASS (g/L) This is the dried solids that are obtained from the mixed liquor suspended solids in the unit.  | 1  |  | 0.075           |
| VENT RATE of total gas leaving the unit (G, m <sup>3</sup> /s)  | 2  |  | .1              |
| TEMPERATURE of the liquid in the unit (deg. C)  | 3  |  | 25              |
| INLET CONCENTRATION of compound (g/m <sup>3</sup> or ppmw)  | 4  |  | 100             |
| EXIT CONCENTRATION of compound (g/m <sup>3</sup> or ppmw)   | 5  |  | 5               |
| ESTIMATE OF Henry's law constant (H, g/m <sup>3</sup> in gas / g/m <sup>3</sup> in liquid). Obtained from Form IX   | 6  |  | 0.00021         |
| AREA OF REACTOR (m <sup>2</sup> )   | 7  |  | 3400            |
| VOLUME OF REACTOR (m <sup>3</sup> )   | 8  |  | 10000           |
| FLOW RATE of waste treated in the unit (m <sup>3</sup> /s)  | 9  |  | 0.146           |
| CALCULATION OF THE ESTIMATE OF K1   |    |  |                 |
| TOTAL REMOVAL (g/s) Subtract the number on line 5 from the number on line 4 and multiply the result by the number on line 9. Enter the results here.                              | 10 |  | 13.8700         |
| [H G] ESTIMATE (m <sup>3</sup> /s) Multiply the number on line 2 by the number on line 6. Enter the results here.   | 11 |  | 0.00002         |
| [K1 B V + H G] (m <sup>3</sup> /s) Divide the number on line 10 by the number on line 5. Enter the results here.  | 12 |  | 2.7740          |
| [K1 B V] ESTIMATE (m <sup>3</sup> /s) Subtract the number on line 11 from the number on line 12. Enter the results here.  | 13 |  | 2.7740          |
| If the number on line 11 is greater than the number on line 13, this procedure cannot be used to demonstrate that the compound is biodegradable. Do not complete lines 14 and 15. |    |  |                 |
| Product of B and V. Multiply the number on line 1 by the number on line 8 and enter the results here.   | 14 |  | 750.000         |
| K1 ESTIMATE (L/gbio-hr) Divide the number on line 13 by the number on line 14 and multiply by 3600 s/hr. Enter the results here.  | 15 |  | 13.3200         |
| EQUIVALENT KL. Divide the number on line 11 by the number on line 7. Enter the results here.  | 16 |  | 0.0000          |

This form may be used to estimate the Equivalent KL with input data for lines 2, 6, and 7.

| Form V-A DATA FORM FOR THE CAOCULATION OF K1 FROM A COVERED, VENTED BIODEGRADATIN UNIT. THE VENT CONCENTRATION IS MEASURED.   |    |  |                 |
|---|----|--|-----------------|
| NAME OF THE FACILITY for site specific biorate determination  |    |  | example         |
| COMPOUND for site specific biorate determination  |    |  | <i>methanol</i> |
| BIOMASS (g/L) This is the dried solids that are obtained from the mixed liquor suspended solids in the unit.  | 1  |  | 0.075           |
| VENT RATE of total gas leaving the unit (G, m <sup>3</sup> /s)  | 2  |  | .1              |
| TEMPERATURE of the liquid in the unit (deg. C)  | 3  |  | 25              |
| INLET CONCENTRATION of compound (Ci, g/m <sup>3</sup> or ppmw)  | 4  |  | 100             |
| EXIT CONCENTRATION of compound (Ce, g/m <sup>3</sup> or ppmw)   | 5  |  | 5               |
| VENT CONCENTRATION of compound (Cv, g/m <sup>3</sup> )  | 6  |  | 0.001           |
| AREA OF REACTOR SURFACE (m <sup>2</sup> )   | 7  |  | 3400            |
| VOLUME OF REACTOR (m <sup>3</sup> )   | 8  |  | 10000           |
| FLOW RATE of waste treated in the unit (m <sup>3</sup> /s)  | 9  |  | 0.146           |
| CALCULATION OF THE ESTIMATE OF K1   |    |  |                 |
| TOTAL REMOVAL (g/s) Subtract the number on line 5 from the number on line 4 and multiply the results by the number on line 9. Enter the results here.                             | 10 |  | 13.87000<br>0   |
| [ G Cv/Ce] ESTIMATE (m <sup>3</sup> /s) Multiply the number on line 2 by the number on line 6 and divide by the number on line 5. Enter the results here.                         | 11 |  | 0.000020        |
| [K1 B V + G Cv/Ce] (m <sup>3</sup> /s) Divide the number on line 10 by the number on line 5. Enter the results here.  | 12 |  | 2.774000        |
| [K1 B V] ESTIMATE (m <sup>3</sup> /s) Subtract the number on line 11 from the number on line 12. Enter the results here.  | 13 |  | 2.774000        |
| If the number on line 11 is greater than the number on line 13, this procedure cannot be used to demonstrate that the compound is biodegradable. Do not complete lines 14 and 15. |    |  |                 |
| Product of B and V. Multiply the number on line 1 by the number on line 8 and enter the results here.   | 14 |  | 750.0000<br>00  |
| K1 ESTIMATE (L/gbio-hr) Divide the number on line 13 by the number on line 14 and multiply by 3600 s/hr. Enter the results here.  | 15 |  | 13.31520<br>0   |
| EQUIVALENT KL. Divide the number on line 11 by the number on line 7. Enter the results here.  | 16 |  | 0.000000        |

| Form VI DATA FORM FOR THE ESTIMATION OF K1<br>FROM FULL SCALE UNIT DATA WITH BIODEGRADATION   |    |  |           |
|---|----|--|-----------|
| NAME OF THE FACILITY for site specific biorate determination  |    |  | example   |
| COMPOUND for site specific biorate determination  |    |  | methanol  |
| BIOMASS (g/L) This is the dried solids that are obtained from the mixed liquor suspended solids in the full-scale bioreactor.                                       | 1  |  | 0.075     |
| VOLUME of full-scale system (cubic meters)  | 2  |  | 100000    |
| AREA of the liquid surface of the full-scale system (square meters)   | 3  |  | 10000     |
| INLET CONCENTRATION of compound (g/m <sup>3</sup> or ppmw)  | 4  |  | 100       |
| EXIT CONCENTRATION of compound (g/m <sup>3</sup> or ppmw)   | 5  |  | 5         |
| ESTIMATE OF KL from Form II (m/s)   | 6  |  | 0.00001   |
| FLOW RATE of waste treated in the full-scale bioreactor (m <sup>3</sup> /s)   | 7  |  | 0.146     |
| CALCULATION OF THE ESTIMATE OF K1 FROM FIELD DATA   |    |  |           |
| REMOVAL WITH BIODEGRADATION (g/s) Subtract the number on line 5 from the number on line 4 and multiply the results by the number on line 7. Enter the results here. | 8  |  | 13.8700   |
| [KL A] ESTIMATE (m <sup>3</sup> /s) Multiply the number on line 3 by the number on line 6. Enter the results here.  | 9  |  | 0.10      |
| [K1 B V + KL A] (m <sup>3</sup> /s) Divide the number on line 8 by the number on line 5. Enter the results here.  | 10 |  | 2.7740    |
| [K1 B V] ESTIMATE (m <sup>3</sup> /s) Subtract the number on line 9 from the number on line 10. Enter the results here.   | 11 |  | 2.6740    |
| Product of B and V. Multiply the number on line 1 by the number on line 2 and enter the results here.   | 12 |  | 7,500.000 |
| K1 ESTIMATE (L/gbio-hr) Divide the number on line 11 by the number on line 12 and multiply by 3600 s/hr. Enter the results here.                                    | 13 |  | 1.2835    |

**FORM VII****DATA FORM FOR CALCULATING THE  
MASS TRANSFER COEFFICIENT FOR A QUIESCENT SURFACE IMPOUNDMENT**

Facility Name: \_\_\_\_\_

Waste Stream Compound: \_\_\_\_\_

Enter the following:

F - Impoundment fetch (m) \_\_\_\_\_  
 D - Impoundment depth (m) \_\_\_\_\_  
 $U_{10}$  - Windspeed 10 m above liquid surface (m/s) \_\_\_\_\_  
 $D_w$  - Diffusivity of compound in water (cm<sup>2</sup>/s) \_\_\_\_\_  
 $D_{ether}$  - Diffusivity of ether in water (cm<sup>2</sup>/s) \_\_\_\_\_  
 $\mu_a$  - Viscosity of air, (g/cm-s) \_\_\_\_\_  
 $\rho_a$  - Density of air, (g/cm<sup>3</sup>) \_\_\_\_\_  
 $D_a$  - Diffusivity of compound in air, (cm<sup>2</sup>/s) \_\_\_\_\_  
 A - Area of impoundment, (m<sup>2</sup>) \_\_\_\_\_  
 H - Henry's law constant, (atm-m<sup>3</sup>/g mol) \_\_\_\_\_  
 R - Universal gas constant, (atm-m<sup>3</sup>/g mol. °K) \_\_\_\_\_  
 $\mu_w$  - Viscosity of water, (g/cm-s) \_\_\_\_\_  
 $\rho_l$  - Density of liquid, (g/cm<sup>3</sup>) \_\_\_\_\_  
 T - Impoundment temperature, (°C) \_\_\_\_\_

Calculate the following:

Calculate F/D: \_\_\_\_\_

A. Calculate the liquid phase mass transfer coefficient,  $k_L$ , using one of the following procedures, (m/s)

1. Where  $F/D < 14$  and  $U_{10} > 3.25$  m/s, use the following procedure from MacKay and Yeun:<sup>1</sup>

Calculate the Schmidt number on the liquid side,  $Sc_L$ , as follows:

$$Sc_L = \mu_l / \rho_l D_w$$

Calculate the friction velocity,  $U^*$ , as follows, (m/s):

$$U^* = 0.01 \times U_{10} (6.1 + 0.63 U_{10})^{0.5}$$

Where  $U^*$  is  $> 0.3$ , calculate  $k_L$  as follows:

$$k_L = (1.0 \times 10^{-6}) + (34.1 \times 10^{-6}) U^* \times Sc_L^{-0.5}$$

Where  $U^*$  is  $< 0.3$ , calculate  $k_L$  as follows:

$$k_L = (1.0 \times 10^{-6}) + (144 \times 10^{-6}) (U^*)^{2.2} \times Sc_L^{-0.5}$$

<sup>1</sup>Mackay, D., and A. Yeun. Mass Transfer Coefficient Correlations for Volatilization of Organic Solutes from Water. Environmental Science and Technology. 17:211-217. 1983.

2. For all other values of  $F/D$  and  $U_{10}$ , calculate  $k_L$  using the following procedure from Springer:<sup>2</sup>

Where  $U_{10}$  is  $< 3.25$  m/s, calculate  $k_L$  as follows:

$$k_L = 2.78 \times 10^{-6} (D_w/D_{ether})^{2/3}$$

Where  $U_{10}$  is  $> 3.25$  and  $14 < F/D < 51.2$ , Calculate  $k_L$  as follows:

$$k_L = [2.605 \times 10^{-9} (F/D) + 1.277 \times 10^{-7}] U_{10}^2 (D_w/D_{ether})^{2/3}$$

Where  $U_{10} > 3.25$  m/s and  $F/D > 51.2$ , calculate  $k_L$  as follows:

$$k_L = (2.611 \times 10^{-7}) U_{10}^2 (D_w/D_{ether})^{2/3}$$

- B. Calculate the gas phase mass transfer coefficient,  $k_G$ , using the following procedure from MacKay and Matsasugu, (m/s):<sup>3</sup>

Calculate the Schmidt number on the gas side,  $Sc_G$ , as follows:  $Sc_G = \mu_G/\rho_G D_a$  \_\_\_\_\_

Calculate the effective diameter of the impoundment,  $d_e$ , as follows, (m):

$$d_e = (4A/\pi)^{0.5}$$

Calculate  $k_G$  as follows, (m/s):  $k_G = 4.82 \times 10^{-3} U_{10}^{0.78} Sc_G^{-0.67} d_e^{-0.11}$  \_\_\_\_\_

- C. Calculate the partition coefficient,  $Keq$ , as follows:  $Keq = H/[R(T+273)]$  \_\_\_\_\_

- D. Calculate the overall mass transfer coefficient,  $K_q$ , as follows, (m/s):

$$1/K_q = 1/k_L + 1/Keq \cdot k_G$$

Where the total impoundment surface is quiescent:

$$KL = K_q$$

Where a portion of the impoundment surface is turbulent, continue with Form VIII.

<sup>2</sup>Springer, C., P. D. Lunney, and K. T. Valsaraj. Emission of Hazardous Chemicals from Surface and Near Surface Impoundments to Air. U.S. Environmental Protection Agency, Solid and Hazardous Waste Research Division. Cincinnati, OH. Project Number 808161-02. December 1984.

<sup>3</sup>Hwang, S. T. Toxic Emissions from Land Disposal Facilities. Environmental Progress. 1:46-52. February 1982.

**FORM VIII**

**DATA FORM FOR CALCULATING THE  
MASS TRANSFER COEFFICIENT FOR AN AERATED SURFACE IMPOUNDMENT**

Facility Name: \_\_\_\_\_

Waste Stream Compound: \_\_\_\_\_

Enter the following:

- J - Oxygen transfer rating of surface aerator, (lb O<sub>2</sub>/hr-hp) \_\_\_\_\_
- POWR - Total power to aerators, (hp) \_\_\_\_\_
- T - Water temperature, (°C) \_\_\_\_\_
- O<sub>i</sub> - Oxygen transfer correction factor \_\_\_\_\_
- MW<sub>L</sub> - Molecular weight of liquid \_\_\_\_\_
- A<sub>t</sub> - Turbulent surface area of impoundment, (ft<sup>2</sup>) \_\_\_\_\_  
(If unknown, use values from Table 1)
- A - Total surface area of impoundment, (ft<sup>2</sup>) \_\_\_\_\_
- ρ<sub>L</sub> - Density of liquid, (lb/ft<sup>3</sup>) \_\_\_\_\_
- D<sub>w</sub> - Diffusivity of constituent in water, (cm<sup>2</sup>/s) \_\_\_\_\_
- D<sub>O<sub>2</sub>,w</sub> - Diffusivity of oxygen in water, (cm<sup>2</sup>/s) \_\_\_\_\_
- d - Impeller diameter, (cm) \_\_\_\_\_
- w - Rotational speed of impeller, (rad/s) \_\_\_\_\_
- ρ<sub>a</sub> - Density of air, (gm/cm<sup>3</sup>) \_\_\_\_\_
- N - Number of aerators \_\_\_\_\_
- g<sub>c</sub> - Gravitation constant, (lb<sub>m</sub>-ft/s<sup>2</sup>/lb<sub>f</sub>) \_\_\_\_\_
- d<sup>\*</sup> - Impeller diameter, (ft) \_\_\_\_\_
- D<sub>a</sub> - Diffusivity of constituent in air, (cm<sup>2</sup>/s) \_\_\_\_\_
- MW<sub>a</sub> - Molecular weight of air \_\_\_\_\_
- R - Universal gas constant, (atm-m<sup>3</sup>/g mol. °C) \_\_\_\_\_
- H = Henry's law constant, (atm-m<sup>3</sup>/g mol) \_\_\_\_\_

Calculate the following:

- A. Calculate the liquid phase mass transfer coefficient, k<sub>L</sub>, using the following Equation from Thibodeaux:<sup>4,5</sup>

$$k_L = [8.22 \times 10^{-9} J (POWR)(1.024)^{T-20} O_i 10^6 MW_L / (V_a \rho_L)] (D_w / D_{O_2,w})^{0.5}, (m/s)$$

<sup>4</sup>GCA Corporation. Emissions Data and Model Review for Wastewater Treatment Operations. Draft Technical Note. Prepared for U.S. Environmental Protection Agency. Contract No. 68-01-6871, Assignment 49. August 1985. p. 4-2.

<sup>5</sup>Hwang, S. T. Toxic Emissions from Land Disposal Facilities. Environmental Progress. 1:46-52. February 1982.

- B. Calculate the gas phase mass transfer coefficient,  $k_G$ , using the following procedure from Reinhardt:<sup>6,7</sup>

Calculate the viscosity of air,  $\mu_a$ , as follows, (g/cm.s):

$$\mu_a = 4.568 \times 10^{-7} T + 1.7209 \times 10^{-4}$$

Calculate the Reynold's number as follows:

$$R_e = d^2 w \rho_a / \mu_a$$

Calculate power to impeller,  $P_i$ , as follows, (ft.lb/s):

$$P_i = 0.85 (\text{POWR}) 550/N$$

Calculate the power number,  $p$ , as follows:

$$p = P_i g_c / (\rho_L d^{2.5} w^3)$$

Calculate the Schmidt number,  $Sc_G$ , as follows:

$$Sc_G = \mu_a / \rho_a D_a$$

Calculate the Fronde number,  $F_r$ , as follows:

$$F_r = d^3 w^2 / g_c$$

Calculate  $k_G$  as follows:

$$k_G = 1.35 \times 10^{-7} R_e^{1.42} p^{0.4} Sc_G^{0.5} F_r^{-0.21} D_a MW_a / d, \text{ (m/s)}$$

- C. Calculate the partition coefficient,  $Keq$ , as follows:

$$Keq = H / [R(T+273)]$$

- D. Calculate the overall turbulent mass transfer coefficient,  $K_t$ , as follows, (m/s):

$$1/K_t = 1/k_L + 1/Keq.k_G$$

- E. Calculate the quiescent mass transfer coefficient,  $K_q$ , for the impoundment using Form VII.

- F. Calculate the overall mass transfer coefficient,  $KL$ , for the impoundment as follows:

$$KL = \frac{K_q (A - A_t) + K_t A_t}{A}$$

<sup>6</sup>GCA Corporation. Emissions Data and Model Review for Wastewater Treatment Operations. Draft Technical Note. Prepared for U.S. Environmental Protection Agency. Contract No. 68-01-6871, Assignment 49. August 1985. p. 4-3.

<sup>7</sup>Reinhardt, J. R. Gas-Side Mass-Transfer Coefficient and Interfacial Phenomena of Flat-Bladed Surface Agitators. Ph.D. dissertation, University of Arkansas, Fayetteville, Ar. 1977. p. 48.

Table 1. Turbulent Areas and Volumes for Surface Agitators\*

| $\omega$ , Motor<br>horsepower,<br>hp | $A_t$ , Turbulent area, |                | Effective<br>depth, ft | $V$ , Agitated<br>volume, ft <sup>3</sup> | $a_v$ , Area per<br>volume ft <sup>2</sup> /ft <sup>3</sup> |
|---------------------------------------|-------------------------|----------------|------------------------|---|---|
|                                       | ft <sup>2</sup>         | m <sup>2</sup> |                        |   |   |
| 5                                     | 177                     | 16.4           | 10                     | 1,767                                     | 0.100   |
| 7.5                                   | 201                     | 18.7           | 10                     | 2,010                                     | 0.100   |
| 10                                    | 227                     | 21             | 10.5                   | 2,383                                     | 0.0952  |
| 15                                    | 284                     | 26.4           | 11                     | 3,119                                     | 0.0909  |
| 20                                    | 346                     | 32.1           | 11.5                   | 3,983                                     | 0.0870  |
| 25                                    | 415                     | 38.6           | 12                     | 4,986                                     | 0.0833  |
| 30                                    | 491                     | 45.7           | 12                     | 5,890                                     | 0.0833  |
| 40                                    | 661                     | 61.4           | 13                     | 8,587                                     | 0.0769  |
| 50                                    | 855                     | 79.5           | 14                     | 11,970                                    | 0.0714  |
| 60                                    | 1,075                   | 100            | 15                     | 16,130                                    | 0.0666  |
| 75                                    | 1,452                   | 135            | 16                     | 23,240                                    | 0.0625  |
| 100                                   | 2,206                   | 205            | 18                     | 39,710                                    | 0.0555  |

\*Data for a high speed (1,200 rpm) aerator with 60 cm propeller diameter (d).

| Form IX DATA FORM FOR THE ESTIMATION OF THE HENRY'S LAW CONSTANT FOR A COMPOUND IN THE BIOLOGICAL TREATMENT UNIT  |   |  |          |
|---|---|--|----------|
| NAME OF THE FACILITY for site specific biorate determination  |   |  | example  |
| COMPOUND for site specific biorate determination  |   |  | methanol |
| LISTED HENRY'S LAW VALUE AT 25 degrees Celsius.<br>(ratio of mol fraction in gas to mole fraction in water)   | 1 |  | .2885    |
| TEMPERATURE of the liquid in the unit (deg.C)   | 2 |  | 25       |
| CALCULATION OF K  |   |  |          |
| Temperature adjusted Henry's law value (equals the value on line 1 if the temperature on line 2 is 25)  | 3 |  | 0.2885   |
| Discuss basis of temperature adjustment   |   |  |          |
| Temperature in degrees Kelvin. Add 273.16 to the number on line 2. Enter the results here.  | 4 |  | 298.1600 |
| Temperature ratio. Divide 273.16 by the number on line 4. Enter the results here.   | 5 |  | 0.9162   |
| Henry's Law adjustment factor. Multiply the number on line 5 by 0.804 and enter the results here.   | 6 |  | 0.7366   |
| Henry's Law value (g/m3 gas per g/m3 liquid) Multiply the number on line 3 by the number on line 6 and divide the results by 1000. Enter the results here and on Form V line 6. | 7 |  | 0.0002   |
| Henry's Law value (atm m3 per mol ) Divide the number on line 3 by 55555 and enter the results here.  | 8 |  | 0.000005 |

[57 FR 61992, Dec. 29, 1992, as amended at 59 FR 19605, Apr. 22, 1994]

APPENDIX D TO PART 63—ALTERNATIVE VALIDATION PROCEDURE FOR EPA WASTE AND WASTEWATER METHODS

1. *Applicability*

This procedure is to be applied exclusively to Environmental Protection Agency methods developed by the Office of Water and the Office of Solid Waste. Alternative methods developed by any other group or agency shall

be validated according to the procedures in Sections 5.1 and 5.3 of Test Method 301, 40 CFR Part 63, Appendix A. For the purposes of this appendix, "waste" means waste and wastewater.

2. *Procedure*

This procedure shall be applied once for each waste matrix. Waste matrix in the context of this procedure refers to the target compound mixture in the waste as well as the formulation of the medium in which the target compounds are suspended. The owner

or operator shall prepare a sampling plan. Wastewater samples shall be collected using sampling procedures which minimize loss of organic compounds during sample collection and analysis and maintain sample integrity. The sample plan shall include procedures for determining recovery efficiency of the relevant compounds regulated in the applicable subpart. An example of an acceptable sampling plan would be one that incorporates similar sampling and sample handling requirements to those of Method 25D of 40 CFR part 60, appendix A.

### 2.1. Sampling and Analysis

2.1.1. For each waste matrix, collect twice the number of samples required by the applicable regulation. Designate and label half the sample vials the “spiked” sample set, and the other half the “unspiked” sample set. Immediately before or immediately after sampling (immediately after in the context of this procedure means after placing the sample into the sample vial, but before the sample is capped, cooled, and shipped to the laboratory for analysis), inject, either individually or as a solution, all the target compounds into each spiked sample.

2.1.2. The mass of each spiked compound shall be 40 to 60 percent of the mass expected to be present in the waste matrix. If the concentration of the target compounds in the waste are not known, the mass of each spiked compound shall be 40 to 60 percent of the limit allowed in the applicable regulation. Analyze both sets of samples (spiked and unspiked) with the chosen method.

### 3. Calculations

For each pair of spiked and unspiked samples, determine the fraction of spiked compound recovered (R) using the following equations.

where:

$m_r$  = mass spiked compound measured ( $\mu\text{g}$ ).

$m_s$  = total mass of compound measured in spiked sample ( $\mu\text{g}$ ).

$m_u$  = total mass of compound measured in unspiked sample ( $\mu\text{g}$ ).

where:

S = theoretical mass of compound spiked into spiked sample ( $\mu\text{g}$ ).

### 3.1. Method Evaluation

In order for the chosen method to be acceptable for a compound,  $0.70 \leq R \leq 1.30$  (R in this case is an average value of all the spiked and unspiked sample set R values). If the average R value does not meet this criterion for a target compound, the chosen method is not acceptable for that compound, and therefore another method shall be evaluated for acceptance (by repeating the procedures outlined above with another method).

### 3.2. Records and Reports

Report the average R value in the test report and correct all reported measurements made with the method with the calculated R value for that compound by using the following equation:

$$\text{Reported Result} = \frac{\text{Measured Mass of Compound}}{\text{R for that compound}}$$

### 3.3. Optional Correction Step

If the applicable regulation allows for correction of the mass of the compound in the waste by a published  $f_m$  value, multiply the reported result calculated above with the appropriate  $f_m$  value for that compound.

[61 FR 34200, July 1, 1996]

## PART 66—ASSESSMENT AND COLLECTION OF NONCOMPLIANCE PENALTIES BY EPA

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APPENDIX A TO PART 66—TECHNICAL SUPPORT DOCUMENT [NOTE]

APPENDIX B TO PART 66—INSTRUCTION MANUAL [NOTE]

APPENDIX C TO PART 66—COMPUTER PROGRAM [NOTE]

AUTHORITY: Sec. 120, Clean Air Act, as amended, 42 U.S.C. 7420.

SOURCE: 45 FR 50110, July 28, 1980, unless otherwise noted.

## Subpart A—Purpose and Scope

### § 66.1 Applicability and effective date.

(a) This part applies to all proceedings for the assessment by EPA of a noncompliance penalty as provided by section 120 of the Clean Air Act. This penalty is designed to recover the economic advantage which might otherwise accrue to a source by reason of its failure to comply with air pollution control standards after receipt of a notice of noncompliance.

(b) These regulations shall be effective October 27, 1980.

### § 66.2 Program description.

This part sets forth the procedures by which EPA will administer the noncompliance penalty provisions of section 120 of the Clean Air Act. Subpart A describes the scope of the part, defines key terms and states the manner of operation of these provisions subpart B states which sources of air pollution are subject to these penalties and the form and substance of the notice of noncompliance. Subpart C and the accompanying Technical Support Document and Manual state how a source must compute the penalty which it owes. Subpart D describes the conditions under which an exemption from the penalty may be available, and subpart E sets forth the procedures for requesting such an exemption. Subpart F states how EPA will review penalties calculated by sources under subpart C, and subpart G describes the method of payment. Subpart H provides for adjustment of the penalty after the source has come into compliance and the actual costs of doing so are known. Finally, subpart I states which actions under these regulations are subject to judicial review and on what conditions, and subpart J provides supplemental procedures for adjudicatory hearings.

### § 66.3 Definitions.

In this part and part 67:

(a) *Act* means the Clean Air Act, 42 U.S.C. 7401 *et seq.* as amended on August 7, 1977, except where the context specifically indicates otherwise.

(b) *Affiliated entity* means a person who directly, or indirectly through one or more intermediaries, controls, is controlled by, or is under common control with the owner or operator of a source.

(c) *Applicable legal requirements* means any of the following:

(1) In the case of any major source, any emission limitation, emission standard, or compliance schedule under any EPA-approved State implementation plan (regardless of whether the source is subject to a Federal or State consent decree);

(2) In the case of any source, an emission limitation, emission standard, standard of performance, or other requirement (including, but not limited to, work practice standards) established under section 111 or 112 of the Act;

(3) In the case of a source that is subject to a federal or federally approved state judicial consent decree or EPA approved extension, order, or suspension, any interim emission control requirement or schedule of compliance under that consent decree, extension, order or suspension;

(4) In the case of a nonferrous smelter which has received a primary nonferrous smelter order issued or approved by EPA under Section 119 of the Act, any interim emission control requirement (including a requirement relating to the use of supplemental or intermittent controls) or schedule of compliance under that order.

(d) *Approved Section 120 program* means a State program to assess and collect Section 120 penalties that has been approved by the Administrator.

(e) *Computer program* means the computer program used to calculate non-compliance penalties under section 120 of the Clean Air Act. This computer program appears as appendix C to these regulations.

(f) *Control* (including the terms *controlling*, *controlled by*, and *under common control with*) means the power to direct or cause the direction of the management and policies of a person or organization, whether by the ownership of stock, voting rights, by contract, or otherwise.

(g) *Environmental Appeals Board* shall mean the Board within the Agency de-

scribed in §1.25 of this title. The Administrator delegates authority to the Environmental Appeals Board to issue final decisions in appeals filed under this part. Appeals directed to the Administrator, rather than to the Environmental Appeals Board, will not be considered. This delegation of authority to the Environmental Appeals Board does not preclude the Environmental Appeals Board from referring an appeal or a motion filed under this part to the Administrator for decision when the Environmental Appeals Board, in its discretion, deems it appropriate to do so. When an appeal or motion is referred to the Administrator, all parties shall be so notified and the rules in this part referring to the Environmental Appeals Board shall be interpreted as referring to the Administrator.

(h) *Major stationary source* means any stationary facility or source of air pollutants which directly emits, or has the potential to emit, one hundred tons per year or more of any air pollutant regulated by EPA under the Clean Air Act.

(i) *Manual* means the *Noncompliance Penalties Instruction Manual* which accompanies these regulations. This Manual appears as appendix B to these regulations.

(j) *Owner or operator* means any person who owns, leases, operates or supervises a facility, building, structure or installation which emits or has the potential to emit any air pollutant regulated by EPA under the Act.

(k) *Potential to emit* means the capability at maximum design capacity to emit a pollutant after the application of air pollution control equipment. Annual potential shall be based on the larger of the maximum annual rated capacity of the stationary source assuming continuous operation, or on a projection of actual annual emissions. Enforceable permit conditions on the type of materials combusted or processed may be used in determining the annual potential. Fugitive emissions, to the extent quantifiable, will be considered in determining annual potential for those stationary sources whose fugitive emissions are regulated by the applicable state implementation plan.

(l) *Source* means any source of air pollution subject to applicable legal requirements as defined in paragraph (c).

(m) *Technical Support Document* means the *Noncompliance Penalties Technical Support Document* which accompanies these regulations. The Technical Support Document appears as appendix A to these regulations.

All other terms are defined as they are in the Act.

[45 FR 50110, July 28, 1980, as amended at 57 FR 5328, Feb. 13, 1992]

**§66.4 Limitation on review of regulations.**

No applicable legal requirement, which could have been reviewed or challenged by means of the timely filing of an appropriate petition, no provision of this part or part 67 or appendices A, B or C, may be challenged, reviewed or re-examined in any hearing conducted under this part or part 67. This limitation on review includes, but is not limited to:

(a) Arguments that the statute is more or less restrictive than the regulations, e.g., that exemptions other than those provided herein should be granted.

(b) Arguments that the economic model does not accurately calculate the economic benefits of noncompliance, or that parameters, terms and conditions other than those provided for in the model should be used or that evidence other than that described in the Technical Support Document for establishing inputs should be considered.

**§66.5 Savings clause.**

Proceedings under these regulations for imposition of a penalty under section 120 are in addition to any other proceedings related to permits, orders, payments, sanctions or other requirements of State or Federal law. No action under this part or part 67 shall affect in any way any administrative, civil or criminal enforcement proceeding brought under any provision of the Clean Air Act or State or local law.

**§66.6 Effect of litigation; time limits.**

(a) The existence of any litigation on the validity of these regulations shall

not affect the authority of the Agency to issue notices of noncompliance or to conduct subsequent administrative proceedings under parts 66 and 67.

(b) Failure of the Environmental Appeals Board or the Presiding Officer at a hearing to meet any of the time limits contained in this part 66 and part 67 of this chapter shall not affect the validity of any proceeding under these regulations.

(c) The filing of any petition for reconsideration under this part or part 67 or the institution of EPA review of a State determination under part 67 shall not toll the accrual of noncompliance penalties. The penalty will be calculated from the date on which the source owner or operator receives a notice of noncompliance.

[45 FR 50110, July 28, 1980, as amended at 57 FR 5329, Feb. 13, 1992]

**Subpart B—Notice of Noncompliance**

**§66.11 Issuance of notices of non-compliance.**

(a) The Administrator shall issue a notice of noncompliance to the owner or operator of any source which he determines is in violation of applicable legal requirements and which is located in a State without an approved section 120 program.

(b) The Administrator shall send a notice of noncompliance to the owner or operator of any source located in a State with an approved section 120 program when he determines as provided in part 67 that the source is in violation of applicable legal requirements and the State has failed to send a notice of noncompliance to it, or has failed to pursue diligently any subsequent steps for the assessment or collection of the penalty.

(c) Failure of EPA or a State to issue a notice of noncompliance within 30 days after discovery of a violation shall not affect the obligation of a source owner or operator to pay a noncompliance penalty but shall affect the date from which the penalty is calculated. The penalty shall be calculated from the earliest date that the owner or operator of the source received a notice of noncompliance under this section, whether issued by EPA or the State.

**§ 66.12 Content of notices of non-compliance.**

(a) Each notice of noncompliance shall be in writing and shall include:

(1) A specific reference to each applicable legal requirement of which the source is in violation;

(2) A brief statement of the factual basis for the finding of violation, together with a reference to any supporting materials and a statement of when and where they may be inspected;

(3) Instructions on calculating the amount of the penalty owed and the schedule for payments. Such instructions shall include (i) a statement of the date from which penalties should be calculated and (ii) a copy of the Technical Support Document and the Manual;

(4) Notice of the right to petition for a hearing to challenge the finding of noncompliance or to claim an exemption; and

(5) Notice that the penalty continues to accrue during the pendency of any hearings granted under this part or Part 67.

(b) Each notice of noncompliance shall be transmitted to the source owner or operator either by personal service or by registered or certified mail, return receipt requested.

**§ 66.13 Duties of source owner or operator upon receipt of a notice of non-compliance.**

(a) Within forty-five days after receiving a notice of noncompliance a source owner or operator shall either:

(1) Calculate the amount of the penalty owed and the appropriate quarterly payment schedule, as provided in the Technical Support Document and Instruction Manual, and transmit that calculation, together with supporting data sufficient to allow verification of the penalty calculation, to the Administrator; or

(2) Submit a petition for reconsideration, alleging that the source is not in violation of applicable legal requirements or that the source owner or operator is entitled to an exemption pursuant to §§ 66.31 through 66.33, or both. A source owner or operator must present both grounds in the petition if he wishes to preserve a claim to an exemption in the event that the source is

found to be in violation. Issues relating to the existence of a violation or entitlement to an exemption not raised in the petition shall be deemed waived.

(b) Any submittal pursuant to this subsection shall specify the identity of the person responsible for the payment of any noncompliance penalty, and to whom any reimbursement, if necessary, shall be sent.

(c) A source owner or operator may amend any petition for reconsideration pursuant to paragraph (a) of this section within 45 days from receipt of a notice of noncompliance. Amendment of such petition after 45 days will be permitted only if based on unforeseeable conditions occurring after termination of the 45 day period, or upon consent of the Administrator.

**Subpart C—Calculation of Noncompliance Penalties****§ 66.21 How to calculate the penalty.**

(a) All noncompliance penalties shall be calculated in accordance with the Technical Support Document and the Manual.

(b) Where the Administrator determines that no existing technology or other emissions control method results in emission levels which satisfy the applicable legal requirement, the penalty calculation shall be based on the cost of the capital equipment, operation and maintenance practices, or other methods of control which best approximates the degree of control required. In such a case, the Administrator may include in the penalty the costs of participation in an EPA approved research and development program where he determines that such participation would be appropriate. Information on appropriate research and development programs will be available from the regional offices or from the Office of Research and Development.

**§ 66.22 Contracting out penalty calculation.**

Upon the failure of a source owner or operator, who does not submit a petition for reconsideration as provided in § 66.13(a)(2), to submit the information described in § 66.13(a)(1) within 45 days of receipt of a notice of noncompliance,

or upon submission of incorrect information as determined pursuant to §66.51, the Administrator may enter into a contract with any qualified person who is not an affiliated entity and who has no financial interest in the owner or operator of the source to assist in determining the amount of the penalty assessment or payment schedule with respect to such source owner or operator. The cost of this contract may be added to the penalty to be assessed against the owner or operator of the source. The data used in calculating the penalty shall be furnished to the source owner or operator at the time that the penalty calculation is reported.

**§66.23 Interim recalculation of penalty.**

(a) The Administrator, upon concluding that a previously approved penalty calculation no longer is accurate, may:

(1) Request, in writing, that the source owner or operator submit a revised calculation in the form specified in §66.13(a). The Administrator shall respond to any information submitted in accordance with the provisions of §66.51.

(2) Notify the source owner or operator, in writing, that the penalty has been recalculated based upon information in the Administrator's possession. The source owner or operator shall respond as provided in §66.52.

(b) If a source owner or operator believes that, because of changed circumstances, a penalty calculation which has been accepted by EPA no longer is accurate, he may submit a revised penalty calculation and schedule to the Administrator. The revised calculation shall be in the form specified in §66.13(a)(1). The Administrator shall respond in accordance with the provisions of §66.51. The decision to accept the interim calculation or to grant a hearing on this issue shall be solely within the discretion of the Administrator.

**Subpart D—Exemption Requests; Revocation of Exemptions**

**§66.31 Exemptions based on an order, extension or suspension.**

(a) A source owner or operator who would otherwise be subject to a non-compliance penalty will be exempted from that penalty during the period for which, and upon a demonstration that, its noncompliance with applicable legal requirements is or was due solely to:

(1) A conversion by such source from the burning of petroleum products or natural gas, or both, as the permanent primary energy source to the burning of coal pursuant to an order under section 113(d)(5) or section 119 of the Act as in effect before August 7, 1977.

(2) In the case of a coal-burning source, the issuance of a prohibition to that source against burning petroleum products or natural gas, or both, by means of an order under sections 2(a) and (b) of the Energy Supply and Environmental Coordination Act of 1974, the Powerplant and Industrial Fuel Use Act, or under any legislation which amends or supersedes these provisions, *Provided*, That the source had received an extension under the second sentence of section 119(c)(1) of the Act as in effect before August 7, 1977.

(3) The use of innovative technology by the source owner or operator pursuant to an enforcement order under section 113(d)(4) of the Act.

(4) An inability to comply with an applicable legal requirement resulting from reasons entirely beyond the control of the owner or operator of such source or of any affiliated entity, *Provided*, That

(i) The source owner or operator has received an order under section 113(d) (or an order under section 113 issued before August 7, 1977) or a federal or EPA-approved State judicial decree or order which has the effect of permitting a delay in complying with the legal requirement at issue, and

(ii) That the source owner or operator meets the requirements of paragraphs (c) and (d) of this section.

(5) The existence of an energy or employment emergency demonstrated by issuance of an order under section 110(f) or 110(g) of the Act, unless such order is disapproved by EPA.

(b) To qualify for an exemption under this section, the source owner or operator must have received the order, extension or suspension or consent decree described in the paragraph of the section pursuant to which the exemption is claimed. No exemption may be sought which, if granted, would exceed the terms of the relevant extension, order, suspension, or consent decree, except as provided in paragraph (e) of this section. No exemption may be sought which is based on a claim that the source owner or operator is entitled to any such order, extension, suspension, or consent decree even though it has not been issued.

(c) In any exemption claim based on paragraph (a)(4) of this section, the source owner or operator must demonstrate:

(1) That the source owner or operator or an affiliated entity in no manner sought, caused, encouraged or contributed to the inability; and

(2) That the source owner or operator in no way unduly delayed negotiation for needed equipment or fuel supply or made unusual demands not typical in its industry, or placed unusual restrictions on the supplier, or delayed in any other manner the delivery of goods or the completion of the necessary construction.

(d)(1) No exemption will be granted pursuant to paragraph (a)(4) of this section unless the owner or operator of the source demonstrates that, with respect to a situation described in paragraph (c), all reasonable steps were taken to prevent the situation causing the inability to comply, that procuring the needed pollution control equipment or fuel supply was given and continues to be given the highest possible priority in the planning and budgeting process of the owner or operator of the source, and that alternative sources of equipment and fuel have been explored without success.

(2) Any exemption granted under paragraph (a)(4) of this section shall cease to be effective when the inability to comply ceases to be entirely beyond

the control of the source owner or operator as defined in this section.

(e) Except in the case of exemptions based on orders under section 113 (d)(4) or (d)(5) or suspensions under section 110(g), the Administrator may grant an exemption with retroactive effect to the date of the event giving rise to the section 120 predicate order, extension, suspension, or consent decree. In such cases, the exemption from the non-compliance penalty shall run from the date that the basis for the exemption first occurred.

[45 FR 50110, July 20, 1980, as amended at 50 FR 36734, Sept. 9, 1985]

#### § 66.32 De Minimis exemptions.

(a) The Administrator may, upon notice and opportunity for public hearing, exempt the owner or operator of any source from a penalty where he finds that a particular instance of non-compliance was *de minimis* in nature and duration.

(b) A petition for an exemption on the ground that the violation described in a notice of noncompliance was *de minimis* in nature and duration may only raise issues related to entitlement to an exemption and shall contain or be accompanied by supporting documentation. Issues relating to entitlement to a *de minimis* exemption not raised in the petition shall be deemed waived.

(c) In ruling upon such a petition, the Administrator shall consider:

(1) The magnitude of the excess emissions and whether the source's non-compliance is recurring or persistent;

(2) The steps the source owner or operator is taking to eliminate the cause of the excess emissions and to minimize such emissions;

(3) Whether any significant economic savings are likely to accrue to the owner or operator of the source as a result of the noncompliance;

(4) The character of the emissions, and their impact on ambient air quality; and

(5) The duration of the violation.

(d) A hearing on a petition for a *de minimis* exemption shall be informal. The hearing shall be scheduled upon notice to the public. Reasonable opportunity to testify and for submission of

questions by the public to the petitioner shall be afforded. The decision of the hearing officer will be made in writing within a reasonable period of time after the close of the hearing.

**§66.33 De Minimis exemptions: malfunctions.**

(a) The Administrator may, upon notice and opportunity for a public hearing, exempt the owner or operator of a source if he finds with respect to a particular instance of noncompliance, that such noncompliance was *de minimis* in nature and duration, and was caused solely by a sudden and unavoidable breakdown of process or pollution control equipment.

(b) A petition for an exemption on the ground that the violation was *de minimis* and was caused by a sudden and unavoidable breakdown of process or pollution control equipment may only raise issues related to entitlement to an exemption and shall contain or be accompanied by supporting documentation. Issues relating to entitlement to an exemption that are not raised in the petition shall be deemed waived. In making such finding the Administrator shall consider whether:

(1) The violation was *de minimis* in nature and duration within the meaning of §66.32;

(2) The air pollution control equipment, process equipment, or processes, including appropriate back-up systems, were designed, and have been maintained and operated in a manner consistent with good practice for minimizing emissions;

(3) Repair of the malfunctioning equipment was undertaken and carried out in an expeditious fashion as soon as the owner or operator knew or should have known that the malfunction existed or that applicable emission limitations were being violated or were likely to be violated;

(4) All practicable steps were taken to minimize the impact of the excess emissions (including any bypass) on ambient air quality;

(5) The excess emissions were not part of a pattern indicative of inadequate design, operation, or maintenance;

(6) Off-shift and overtime labor were utilized where necessary to ensure that

repairs were made as expeditiously as possible or that emissions were minimized to the maximum extent possible; and

(7) The level of economic savings, if any, accruing to the source owner or operator was *de minimis*.

(c) Any activity that could have been foreseen, avoided or planned for, or any breakdown that could have been avoided by the exercise of reasonable diligence shall not constitute grounds for an exemption under this section. Such activities include, but are not limited to, sudden breakdowns avoidable by better maintenance procedures, phasing in and out of process equipment and routine maintenance.

(d) A hearing on any petition for an exemption based upon the unavoidable breakdown of pollution control equipment shall be informal. The hearing shall be scheduled upon notice to the public. Reasonable opportunity to testify and for submission of questions by the public to the petitioner shall be afforded. The decision of the hearing officer will be made in writing within a reasonable period of time after the close of the hearing.

**§66.34 Termination of exemptions.**

(a) Exemptions pursuant to §66.31(a)(1), (2), (3), and (5) will cease to be effective upon termination or revocation of the order on which the exemption is based.

(b) Exemptions pursuant to §66.31(a)(4) will cease to be effective when the order or decree is terminated or revoked, or the inability to comply ceases to be for reasons entirely beyond the control of the source owner or operator as defined in § 66.31(c).

(c) Exemptions granted pursuant to §66.32 or §66.33 shall terminate at the time specified in the exemption.

(d) The Administrator shall notify the source owner or operator, in writing, that the exemption has terminated, and shall specify the date from which the penalty shall be calculated. The notice shall be transmitted as required by §66.12. The source owner or operator shall respond to this notice within 45 days of its receipt and in the form provided in §66.13.

**§ 66.35 Revocation of exemptions.**

(a) The Administrator may upon notice and opportunity for a hearing revoke an exemption granted to the owner or operator of any source at any time in accordance with paragraphs (b) and (c) below.

(b) An exemption may be revoked and a penalty for the period of non-exempted noncompliance assessed if:

(1) The grounds for the exemption no longer exist or never did exist, or

(2) In the case of an exemption under § 66.31, the source owner or operator has failed to comply with any interim emission control requirements or schedules of compliance (including increments of progress) contained in the extension, order, suspension or EPA-approved consent decree on which the exemption was based.

(c) The Administrator shall provide the source owner or operator written notice containing the information required by § 66.12 and a statement of the reasons for revocation. The notice shall also specify the date from which the source owner or operator must calculate a penalty. The notice shall be transmitted as required by § 66.12. The source owner or operator shall respond to this notice within 45 days of its receipt and in the form provided in § 66.13.

**Subpart E—Decisions on Exemption Requests and Challenges to Notices of Noncompliance****§ 66.41 Decision on petitions.**

(a) Within thirty days after receiving a petition filed under § 66.13, the Administrator shall notify the source owner or operator in writing that:

(1) The petition demonstrates that the source owner or operator is entitled to part or all of the relief requested and that the notice of noncompliance is withdrawn or modified accordingly;

(2) The petition does not contain sufficient information to demonstrate that the source owner or operator is entitled to part or all of the relief requested. The Administrator shall specify what deficiencies exist and request that the source owner or operator supplement his petition within thirty days

of receipt of that request. If the petition is not supplemented adequately within this time, or, if supplemented adequately, still fails to demonstrate entitlement to relief, the Administrator shall grant a hearing under paragraph (a)(3) of this section. Any supplemental material provided pursuant to the Administrator's request shall be evaluated as provided in paragraphs (a)(1) and (a)(3) of this section.

(3) A hearing is granted on the issue of whether the source is in violation of applicable legal requirements or is entitled to an exemption under §§ 66.31, 66.32, 66.33, or on both.

[45 FR 50110, July 20, 1980, as amended at 50 FR 36734, Sept. 9, 1985]

**§ 66.42 Procedure for hearings.**

(a) Except as provided in §§ 66.32 and 66.33, hearings granted under § 66.41(a)(3) shall be held as provided in Subpart J.

(b) If hearings are granted pursuant to both § 66.32 or § 66.33 and under Subpart J, a consolidated hearing in accordance with Subpart J shall be held. At the consolidated hearing the issues that would otherwise have been considered at a hearing under § 66.32 or § 66.33 shall be considered pursuant to the procedures for a hearing provided in those sections.

(c) The Presiding Officer at a hearing granted under § 66.41 shall issue an initial decision within 90 days after the Administrator grants the hearing, unless the duration of the hearing or the deadline for decision is extended by the Presiding Officer upon agreement of the parties. Failure to issue a decision (whether or not by consent) within 90 days shall not affect the validity of the proceedings or the accrual of penalties in any manner.

**§ 66.43 Final decision; submission of penalty calculation.**

Within forty-five days after EPA has notified the owner or operator of a source of the final Agency decision that it is in violation of applicable legal requirements or is not entitled to an exemption, the owner or operator shall submit the information required by § 66.13(a), including appropriate compliance and payment schedules and

extra interest owed for the period of delay. The penalty shall be calculated from the date of receipt of the original notice of noncompliance.

### Subpart F—Review of Penalty Calculation

#### § 66.51 Action upon receipt of penalty calculation.

(a) Within thirty days after receipt of a penalty calculation provided pursuant to § 66.13(a)(1) or § 66.43, the Administrator shall notify the source owner or operator in writing, that:

(1) The penalty is provisionally accepted as calculated, subject to any recalculation that may be necessary under § 66.72 after the source has achieved compliance; or

(2) The penalty is incorrect and has been recalculated based on the data provided by the source owner or operator, or other data. The Administrator shall provide a brief statement of the basis for the recalculation and shall identify when and where any supporting data may be examined. The Administrator shall also notify the source owner or operator of the right to petition for a hearing under § 66.52; or

(3) The source owner or operator has not submitted any calculation, or the information submitted is inadequate to enable EPA to verify the owner or operator's penalty calculation. The Administrator shall specify what deficiencies exist and request the source owner or operator to supplement his submission within thirty days of receipt of that request. If an inadequate supplemental submission is made within this time, EPA may calculate the penalty itself or as provided in § 66.22.

(b) Supplemental material provided pursuant to paragraph (a)(3) of this section shall be evaluated as provided in paragraph (a).

#### § 66.52 Petitions for reconsideration of calculation.

Within forty-five days after receipt of notice under § 66.51(a)(2) that the penalty has been recalculated by EPA, a source owner or operator who wishes to challenge EPA's recalculation shall petition in writing for reconsideration. A statement of all arguments on which

the owner or operator relies, including all necessary supporting data and a substitute penalty calculation and payment schedule shall be included in or accompany this petition. Issues not raised in the petition shall be deemed waived.

#### § 66.53 Decisions on petitions.

Within thirty days after receiving a petition for reconsideration under § 66.52 the Administrator shall:

(a) Accept the penalty calculation of the owner or operator to the extent the Administrator concludes it is correct; or

(b) Grant a hearing to the extent he does not conclude that the petition is correct.

[45 FR 50110, July 20, 1980, as amended at 50 FR 36734, Sept. 9, 1985]

#### § 66.54 Procedures for hearing.

(a) Hearings granted under § 66.53 shall be held as provided in subpart J.

(b) The Presiding Officer at a hearing granted under § 66.53 shall issue an initial decision within ninety days after the Administrator grants the hearing, unless the duration of the hearing or the deadline for decision is extended by the Presiding Officer upon agreement of the parties. Failure to issue a decision (whether or not by consent) within 90 days shall not affect the validity of the proceedings or the accrual of penalties in any manner.

### Subpart G—Payment

#### § 66.61 Duty to pay.

(a) Except where the owner or operator has submitted a petition pursuant to § 66.13(a)(2), the first installment of the penalty shall be paid on the date six months after receipt of the notice of noncompliance.

(b) Where the source owner has filed a petition pursuant to § 66.13(a)(2), the first installment consisting of payment of penalties for all quarters "missed" as well as for the upcoming quarter shall be paid on the date six months after a final administrative decision affirming the source owner or operator's liability. Installments shall be paid quarterly thereafter until compliance

is achieved. Quarters shall be measured in increments of three calendar months from the date the first payment is due.

(c) A source owner or operator who submits a petition pursuant to § 66.52 shall pay the penalty amount calculated by the owner or operator under § 66.13 or § 66.43 or any penalty calculated by EPA where the owner or operator has failed to calculate such penalty. Within 45 days after EPA has notified the owner or operator of a final administrative action after hearings on such petition, the owner or operator shall submit any necessary modification to the penalty. The revised penalty will be calculated in accordance with the Technical Support Document and the Manual, and a revised schedule, including appropriate adjustments for overpayments or underpayments made, will be established.

**§ 66.62 Method of payment.**

Payments in excess of \$10,000 under this part shall be made by wire transfer payable to the U.S. Treasury. Payments under this part which are less than \$10,000 shall be made by cashier's or certified check made payable to the United States Treasury, sent by registered mail, return receipt requested, and addressed to the Administrator, Environmental Protection Agency, 401 M Street, SW., Washington, DC 20460. Payment by check is made on the due date if it is postmarked on or before the due date. Payment by wire transfer is made on the due date if the Treasury's account is credited on or before the due date.

**§ 66.63 Nonpayment penalty.**

(a) Any source owner or operator who fails to make timely payment under § 66.61 shall pay in addition to the penalty owed a quarterly nonpayment penalty. The nonpayment penalty shall be calculated as of the due date of the noncompliance penalty payment and shall be equal to 20 percent of the aggregate amount of the noncompliance penalties and nonpayment penalties due and owing from the owner or operator on the due date. Partial payments shall be credited first against the nonpayment penalty, then against the noncompliance penalty.

(b) The Administrator shall notify the source owner or operator in writing of the amount of any nonpayment penalty for which the owner or operator is liable. Failure of the Administrator to provide such notice immediately shall not affect the legal obligation of the source owner or operator to pay such penalty. Such nonpayment penalty, as well as the past due noncompliance penalty, shall be payable immediately.

**Subpart H—Compliance and Final Adjustment**

**§ 66.71 Determination of compliance.**

(a) An owner or operator of a source who is paying a noncompliance penalty under this part shall notify the Administrator in writing when he believes that the source has come into and is maintaining compliance with all applicable legal requirements. The notice shall be accompanied by any factual data, analytical materials, and legal arguments which the source owner or operator believes support such claim.

(b) Within 30 days of receipt of a source owner's submittal, the Administrator shall determine whether the source has achieved and is maintaining compliance with applicable legal requirements, and shall notify the source owner or operator of this determination in writing. If the Administrator is unable to conclude, on the basis of the information submitted, whether the source has achieved and is maintaining compliance with applicable legal requirements, he shall inform the owner or operator of any additional material that is needed. Within 30 days of receipt of such additional material, the Administrator shall determine whether the source has achieved and is maintaining compliance, and shall notify the source owner or operator of this determination in writing.

(c) If the Administrator determines that the source has not achieved or is not maintaining compliance with applicable legal requirements, the source owner or operator may petition for reconsideration within 30 days of receipt of the determination. The source owner or operator shall include in this petition any necessary supporting material. Issues not raised in the petition will be deemed waived. The procedures

of § 66.41 shall be followed upon the receipt of such petition.

(d) In the event that the applicable legal requirement (as defined in § 66.3(c)) the violation of which forms the basis for the penalty is superseded by another applicable legal requirement (as defined in § 66.3(c)) the owner or operator of a source liable for a non-compliance penalty under this part shall notify the Administrator in writing that the owner or operator believes that the applicable legal requirement is superseded and that the period of noncompliance covered by the notice of noncompliance is ended. The notice shall be accompanied by the legal arguments which the source owner or operator believes support such a claim. Within 30 days of receipt of a source owner or operator's notice, the Administrator shall determine whether the period of covered noncompliance is ended and shall notify the source owner or operator of this determination in writing. In cases where the superseding EPA-approved requirement was not approved by EPA within the time period required by statute, the period of covered noncompliance shall be deemed to have ended on the date when EPA under the statute should have acted.

[45 FR 50110, July 20, 1980, as amended at 50 FR 36734, Sept. 9, 1985]

**§ 66.72 Additional payment or reimbursement.**

(a) Within 120 days after the source owner or operator receives notification pursuant to § 66.71(b) that it has achieved and is maintaining compliance with applicable legal requirements, or within 120 days after receipt of a decision to that effect upon petition and hearing, or within 120 days after receipt of a decision to that effect upon an appeal to the Environmental Appeals Board, the source owner or operator shall submit to the Administrator a revised penalty calculation as provided in the Technical Support Document and the Manual, together with data necessary for verification. The revised calculation shall include interest on any underpayment.

(b) Within thirty days after receiving a revised penalty calculation provided pursuant to paragraph (a) of this sec-

tion, the Administrator shall inform the source owner or operator in writing that:

(1) The revised penalty is correct as calculated;

(2) The revised penalty is incorrect and has been recalculated based on the data provided by the source owner or operator or on other data. The Administrator shall provide to the source owner or operator a brief statement of the basis of the recalculation and shall identify when and where any supporting data may be examined. The Administrator shall also notify the source owner or operator of the right to petition for reconsideration under § 66.73; or

(3) The source owner or operator has not submitted any penalty calculation, or has not submitted enough material to enable EPA to verify the penalty calculation. The Administrator shall specify what deficiencies exist and shall require the source owner or operator to furnish the supplemental material within thirty days of receipt of the notice. The supplemental material submitted will be evaluated in the same manner as the original submittal.

(c) If a source owner or operator fails to submit or to complete a revised penalty calculation when due under this section or the calculation submitted is incorrect, the Administrator may recalculate the penalty or may enter into a contract for independent calculation of the penalty as provided in § 66.22.

(d) Within 120 days after the source owner or operator receives notification pursuant to § 66.71(d) that the period of covered noncompliance ended on the date the applicable legal requirement was superseded (or, in event of EPA delay past an applicable statutory deadline, on the date the applicable legal requirement would have been superseded if there had been no delay past the statutory deadline), the source owner or operator shall submit to the Administrator a revised penalty calculation as provided in the Technical Support Document and Manual together with data necessary for verification. The revised calculation shall include interest on any underpayment. Paragraphs (b) and (c) shall apply to

§ 66.73

calculations submitted under this paragraph.

against the nonpayment penalty, then the deficiency.

[45 FR 50110, July 20, 1980 as amended at 50 FR 36734, Sept. 9, 1985; 57 FR 5329, Feb. 13, 1992]

Subpart I—Final Action

§ 66.73 Petition for reconsideration and procedure for hearing.

§ 66.81 Final action.

Within forty-five days of receipt of a notice under § 66.72(b) (2) a source owner or operator may petition for reconsideration in the form and manner provided in § 66.52. The petition shall be evaluated as provided in § 66.53 and any hearing shall be held in conformity with § 66.54.

(a) A final Agency action appealable to the courts by the source owner or operator includes and is limited to the following, provided the conditions of paragraph (b) of this section are met:

§ 66.74 Payment or reimbursement.

(1) A notice of determination that a source is in violation of applicable legal requirements;

(a) Within thirty days after any adjustment of a noncompliance penalty under this Subpart has become administratively final:

(2) A notice of decision to deny or revoke an exemption under subpart D;

(1) Any deficiency owed by the source owner or operator shall be paid as provided in § 66.62.

(3) A notice of revision by EPA of a penalty calculation or schedule under subpart F;

(2) Any reimbursement shall be paid by check from the United States payable to the order of the source owner or operator, and sent by registered or certified mail, return receipt requested.

(4) A notice of decision by EPA that the source is not in final compliance or any revision by EPA of a final penalty calculation under subpart H; and

(b) Any payment under paragraph (a) of this section, shall include interest on the amount of the deficiency or reimbursement due, from the date the deficiency or reimbursement arose, at a rate determined by the Secretary of the Treasury. Such payment shall be calculated in accordance with the Technical Support Document and the Manual.

(5) A notice of denial of a petition for reconsideration under § 66.71 or § 66.73.

(c) Any source owner or operator who fails to make timely payment of a deficiency shall pay a nonpayment penalty. The nonpayment penalty shall be calculated as of the due date of the deficiency payment and shall be equal to 20% of the deficiency not paid. Such nonpayment penalty (in addition to the amount of the deficiency owed) shall be payable immediately. If any part of the nonpayment penalty or deficiency shall remain unpaid at the end of three calendar months from the due date of the deficiency, a further nonpayment penalty shall be due equal to 20% of the sum of all payments due and owing. Partial payments shall be credited first

(6) A decision by the Administrator upon completion of any review of a State action pursuant to part 67.

(b) The actions listed in paragraph (a) of this section constitute final Agency action only if all administrative remedies have been exhausted. To exhaust administrative remedies, a source owner or operator must first petition for reconsideration of the decision in question and, if unsuccessful after hearing or after denial of hearing, appeal the decision in question to the Environmental Appeals Board. The action becomes final upon the completion of review by the Environmental Appeals Board and notice thereof to the owner or operator of the source.

(c) Where a petition seeks reconsideration both of the finding of noncompliance and of the finding of liability on the ground that the source owner or operator is entitled to an exemption, both questions must be decided before any review by the Environmental Appeals Board is sought, except on agreement of the parties.

[45 FR 50110, July 20, 1980, as amended at 50 FR 36734, Sept. 9, 1985; 57 FR 5329, Feb. 13, 1992]

## Subpart J—Supplemental Rules for Formal Adjudicatory Hearings

### § 66.91 Applicability of supplemental rules.

The Supplemental Rules in this subpart, in conjunction with the Consolidated Rules of Practice (40 CFR part 22) shall govern all hearings held under this part. To the extent that the provisions of these Supplemental Rules or any other provision of this part are inconsistent with the Consolidated Rules, the provisions of this part shall govern.

### § 66.92 Commencement of hearings.

(a) The provisions of 40 CFR 22.08 (Consolidated Rules of Practice) shall become applicable when the Administrator grants a hearing.

(b) Upon granting a hearing the Administrator shall immediately transmit to the appropriate Regional Hearing Clerk two copies of the notice granting the hearing and:

(1) In the case of a hearing pursuant to § 66.42, two copies of the notice of noncompliance under § 66.11 (or the revocation notice under § 66.34) and of the petition of the owner or operator under § 66.13, together with supporting documents; and

(2) In the case of a hearing pursuant to § 66.53 or § 66.73, two copies of the penalty calculation of the source owner or operator provided pursuant to § 66.13(a) or § 66.72, and of any Agency recalculation pursuant to § 66.51(a)(2) or § 66.72(b)(2), and of the petition of the source owner or operator for reconsideration pursuant to § 66.52 or § 66.73, together with supporting documents.

(3) The Regional Hearing Clerk shall open and maintain the official file of the proceeding upon receipt of the documents referred to in paragraphs (b)(1) and (2) of this section.

(c) Upon granting a hearing the Administrator shall request the Chief Administrative Law Judge to designate an Administrative Law Judge to serve as the Presiding Officer. The Chief Administrative Law Judge shall make this designation within seven days of receiving the request, and shall notify the Regional Hearing Clerk of his action. The Regional Hearing Clerk shall forward to the Presiding Officer one set

of the documents described in paragraph (b).

### § 66.93 Time limits.

The Presiding Officer upon designation shall notify the parties and shall, if appropriate, schedule a prehearing conference (or alternative procedures) under 40 CFR 22.19 and shall notify the parties of the date of hearing under 40 CFR 22.21. The Presiding Officer shall issue an initial decision no later than ninety days after the hearing is granted, unless an extension of the hearing schedule or of the deadline for decision is agreed to by the parties. To that end, the Presiding Officer may establish such deadlines as are reasonable and necessary. Failure to issue a decision within 90 days or further extended deadline (whether or not by consent) shall not affect the validity of the proceedings.

### § 66.94 Presentation of evidence.

(a) In hearings pursuant to § 66.42 EPA shall present evidence of violation of applicable legal requirements. The source owner or operator shall then present any rebuttal evidence.

(b) In hearings under § 66.42 the source owner or operator shall present evidence of entitlement to an exemption. EPA shall then present any rebuttal evidence.

(c) In hearings under §§ 66.54 and 66.73 EPA shall present evidence that its calculation or revisions of the source owner or operator's penalty calculations are correct. The source owner or operator shall then present any rebuttal evidence.

(d) Each matter of controversy shall be determined by the Presiding Officer upon a preponderance of the evidence.

(e) Any documentation submitted pursuant to § 66.92(b) shall automatically be received into evidence in the hearing.

### § 66.95 Decisions of the Presiding Officer; Appeal to the Administrator.

(a) The Presiding Officer shall dispose of the issues raised in the hearing in a single written decision. Such decision shall terminate the Presiding Officer's consideration of those issues.

(b) Penalty calculations and payment schedules, if any, established by the decision of the Presiding Officer shall be based solely on the parameters, terms and conditions of the Technical Support Document, Manual, and Computer Program.

(c) An appeal to the Environmental Appeals Board from a decision of the Presiding Officer shall be made by petition filed within twenty (20) days from receipt by a party of the Presiding Officer's decision. The Environmental Appeals Board shall rule on the appeal within 30 days of receipt of a petition. No appeal may be made before receipt of the decision of the Presiding Officer.

[45 FR 50110, July 20, 1980, as amended at 57 FR 5329, Feb. 13, 1992]

#### APPENDIX A TO PART 66—TECHNICAL SUPPORT DOCUMENT

NOTE: For text of appendix A see appendix A to part 67.

#### APPENDIX B TO PART 66—INSTRUCTION MANUAL

NOTE: For text of appendix B see appendix B to part 67.

#### APPENDIX C TO PART 66—COMPUTER PROGRAM

NOTE: For text of appendix C see appendix C to part 67.

### PART 67—EPA APPROVAL OF STATE NONCOMPLIANCE PENALTY PROGRAM

#### Subpart A—Purpose and Scope

Sec.

67.1 Purpose and scope.

#### Subpart B—Approval of State Programs

- 67.11 Standards for approval of State programs.
- 67.12 Application for approval of programs.
- 67.13 Approval.
- 67.14 Amendments to the program.
- 67.15 Revocation.

#### Subpart C—Federal Notice of Noncompliance to Sources in States With Approved Programs

- 67.21 Federal notice of noncompliance to owners or operators of sources in States with approved programs.

#### Subpart D—EPA Review of State Exemption Decisions

- 67.31 Review by the Administrator.
- 67.32 Procedure where no formal State hearing was held.
- 67.33 Procedure where formal State hearing was held.

#### Subpart E—EPA Review of State Penalty Assessments

- 67.41 When EPA may review.
- 67.42 Procedure where no formal State hearing was held.
- 67.43 Procedure where a formal State hearing was held.

#### APPENDIX A TO PART 67—TECHNICAL SUPPORT DOCUMENT

#### APPENDIX B TO PART 67—INSTRUCTION MANUAL

#### APPENDIX C TO PART 67—COMPUTER PROGRAM

AUTHORITY: Sec. 120 of the Clean Air Act, as amended, 42 U.S.C. 7420, unless otherwise noted.

SOURCE: 45 FR 50117, July 28, 1980, unless otherwise noted.

#### Subpart A—Purpose and Scope

##### §67.1 Purpose and scope.

This part describes the standards and procedures under which EPA will approve State programs for administering the noncompliance penalty program under section 120 of the Clean Air Act and will evaluate actions taken by States with approved programs. Subpart A describes the purpose of the part. Subpart B states the conditions under which EPA will approve State programs to administer the noncompliance penalty provisions. Subparts C and D state when and how EPA will issue its own notices to owners or operators of sources in States with approved programs, and how it will review State decisions to grant or deny exemptions from the penalty. Finally, subpart E states how EPA will review State assessments of a penalty.

### Subpart B—Approval of State Programs

#### § 67.11 Standards for approval of State programs.

(a) The Administrator shall approve any program submitted by a State, or by a local governmental agency where no program has been submitted by a State, for administering the non-compliance penalty provisions of section 120 of the Clean Air Act upon finding that the program conforms to the requirements of the Act and to those of this part and 40 CFR part 66. References to “State program” in this part shall be read as including local governmental agencies and their programs.

(b) The Administrator shall not approve any State program that does not provide explicitly for:

(1) Issuance of a notice of noncompliance, in a manner consistent with procedures under part 66, upon discovery by the State or upon notification by EPA of a violation of applicable legal requirements, which notice satisfies the informational requirements set forth in § 66.13.

(2) Levels of staffing and funding satisfactory, in the judgment of the Administrator, to implement and enforce the requirements of section 120 in that State, together with adequate provision for maintaining such levels;

(3) A capability to carry out the financial analysis and procedures specified in these regulations and the Technical Support Document, Instruction Manual, and related Computer Program, available from the Director of Stationary Source Compliance Division, EN-341, 401 M Street, NW., Washington, DC 20460, together with adequate provision for maintaining such capability. Such capability may be provided by trained State personnel or through qualified contractors;

(4) Except as provided in paragraph (a)(6) of this section, an administrative hearing whenever the owner or operator of a source submits a petition for reconsideration of a notice of non-compliance on the ground that the source either is not in violation of applicable legal requirements, or is entitled to an exemption, or both, or submits a petition to challenge a recal-

ulation of the penalty by the State, provided that such petitions raise issues of fact that would require a hearing under part 66. This hearing need not conform to the requirements of 5 U.S.C. 554 as long as its procedures provide for:

(i) An initial decision by the hearing officer on the record;

(ii) A hearing officer who has not performed investigative or litigating functions in any enforcement action against the source owner or operator in question;

(iii) Opportunity for public participation on reasonable notice, including intervention, by interested persons;

(iv) Opportunity for cross-examination or an equivalent opportunity for confrontation between persons advocating differing positions on material factual matters; and

(v) An initial decision by the hearing officer within ninety days of commencement of the hearing unless such period is extended upon agreement of the parties.

(5) Explicit provision for:

(i) Notice to the Administrator of any determination granting an exemption, or finding a source in violation of applicable legal requirements, and any penalty calculation and payment schedule approved or calculated by the State, together with any information necessary to verify its accuracy;

(ii) Within 30 days of receipt of a request from the Administrator, transmission of a copy of the record of the hearing held under paragraph (a)(4) or (6) of this section, including any proffered evidence and a ruling on its admissibility and the State's decision on the merits; and

(iii) Additional reporting and record-keeping, if necessary, adequate to enable the Administrator to review the State's administration of the program and determine whether it conforms to the Act and to part 66 of these regulations. Such requirements will be specified in the Notice of Delegation to the State.

(6) A hearing on the question of whether the owner or operator of a source is entitled to an exemption pursuant to § 66.32 or 66.33 may be informal. The hearing shall be scheduled upon notice to the public. Reasonable

opportunity to testify and for submission of questions to the petitioner by members of the public shall be afforded. A record of the hearing shall be made, and the decision of the hearing officer made in writing within a reasonable period of time after the close of the hearing.

(c) The State may delegate all or part of its responsibilities under its program to a local governmental agency to implement the program within the jurisdiction of the local agency, *Provided* that the program of the local government agency meets the requirements of this section.

(d) No State penalty program or program of one of its agents shall be disapproved because it is more stringent than the program established by part 66 or by section 120 where the State or local agent concludes that it has independent authority under State or local law to implement and administer the more stringent portions of the program.

[45 FR 50117, July 28, 1980, as amended at 54 FR 25259, June 14, 1989]

**§ 67.12 Application for approval of program.**

A state that wishes to administer a section 120 program shall submit an application in writing to the Administrator describing its proposed program. All necessary supporting materials shall accompany the application.

**§ 67.13 Approval.**

(a) The Administrator shall evaluate any application submitted under § 67.12 and shall:

(1) Approve the program and delegate authority to the State to administer the program if he determines that the requirements of § 67.11 have been and will be met; or

(2) Request additional information if he determines that the information submitted is not sufficient to allow him to determine whether the requirements of § 67.11 have been and will be met; or

(3) Disapprove the State program if he determines that the information submitted establishes that the requirements of § 67.11 have not been or will not be met.

(b) The Administrator shall notify the State in writing of his action under paragraph (a) of this section and shall state the reasons for his action.

(c) In all cases of delegation (whether or not express provision is made in the notice of delegation) the Administrator shall retain continuing authority to issue notices of noncompliance, review exemption requests or penalty calculations, or take any other steps set forth in part 66 to assess and collect these penalties. Such authority shall be exercised pursuant to the provisions of § 67.21.

(d) The Administrator shall retain exclusive authority to assess and collect penalties against source owners or operators of facilities in the State who were issued notices of noncompliance pursuant to part 66 prior to the effective date of the delegation, except to the extent the Administrator specifically delegates such authority to the State.

**§ 67.14 Amendments to the program.**

A State or local agent with a program approved pursuant to § 67.13 may propose amendments to that program to the Administrator. The Administrator shall evaluate whether the State or local agent's program as amended would conform to the requirements of § 67.11 and shall respond as provided in § 67.13.

**§ 67.15 Revocation.**

If the Administrator determines that a State with a program approved under § 67.13 is not administering the program in conformity with the requirements of the Act or § 67.11, or the delegation of authority, he shall provide the State written notice of that determination, setting forth his reasons. Copies of all supporting materials shall accompany the notice if requested, or shall be placed on file in the appropriate Regional Office and made available for inspection during normal business hours. The State shall have 90 days in which to respond in writing to this determination. If the Administrator finds after reviewing the State response that (a) the State is in fact administering the program in conformity with § 67.11, or (b) there are reasonable grounds to

believe the State program will immediately be brought into conformity with that section, he shall withdraw his determination. If he finds that neither of these conditions has been met, he shall withdraw the delegation of authority to the State.

### Subpart C—Federal Notice of Noncompliance to Sources in States With Approved Programs

#### § 67.21 Federal notice of noncompliance to owners or operators of sources in States with approved programs.

(a) The Administrator shall issue a notice of noncompliance to the owner or operator of any source in a State with an approved program if he determines that the State or its local agent has failed to issue such notice, provided that he shall first give 30 days notice to the State of his intent to issue a notice of noncompliance to the owner or operator of the source in question unless the State or its agent does so first. Any notice issued by the Administrator pursuant to this section shall be deemed to be issued pursuant to the provisions of part 66.

(b) The issuance of a notice of noncompliance shall operate to withdraw EPA delegation of authority to the State with respect to the particular facility in question.

(c) If the Administrator determines that the State or local agent has issued a notice of noncompliance but has failed to pursue diligently subsequent steps for the assessment and collection of the penalty, he shall notify the State of his intent to withdraw delegation of authority to the State with respect to the facility in question and take appropriate actions pursuant to part 66 unless the State or local agent, within 30 days, takes appropriate action in accordance with the requirements of this part. In either case the penalty will be calculated from the date of the State notice.

### Subpart D—EPA Review of State Compliance or Exemption Decisions

#### § 67.31 Review by the Administrator.

(a) The Administrator may, on his own initiative, review any determination by a State or its agent that a source owner or operator is or is not in compliance with applicable legal requirements or is or is not entitled to an exemption, to determine whether that determination conforms to the requirements of the Act and part 66 (as modified by § 67.11).

(b) The Administrator shall review any such determination upon receipt of a petition alleging that the State's determination does not conform to the requirements of the Act and part 66 (as modified by § 67.11). Such petition must be filed within 20 days of issuance of the State's decision.

(c) The Administrator shall give notice in writing to the State or local agent, to the owner or operator of the source, and to the petitioner of his intent to review the determination. Such notice shall be given within 90 days of the Administrator's receipt of the State or local agent's determination. Unless otherwise provided, such notice shall not withdraw EPA's delegation of authority to the State or local agent over the particular facility in question.

(d) No such State determination shall become final until the expiration of 90 days after the Administrator's receipt of the notice required by § 67.11(b)(5).

(1) If the Administrator does not issue a notice of intent to review within that period, the State determination shall, upon expiration of such period, constitute final action of the Administrator under section 120 of the Act.

(2) If the Administrator issues a notice of intent to review within that period, the State determination shall not become final until the Administrator takes final action after reviewing the determination.

(e) Except as otherwise provided, a State determination shall be approved if there was a reasonable basis in law

and in fact for making the determination.

**§ 67.32 Procedure where no formal State hearing was held.**

(a) In reviewing a decision that a source is in compliance with applicable legal requirements or entitled to an exemption for which no hearing conforming to § 67.11(b) (4) or (6) was held, the Administrator shall evaluate the accuracy and adequacy of the documents transmitted to him pursuant to § 67.11(b)(5) and shall invite submission of comments on issues identified by him as relevant to his review.

(b) If the Administrator concludes that no hearing need have been held and that the State determination was correct, he shall notify the State, the source owner or operator, and other participants of his determination, which shall constitute final agency action by EPA under authority of section 120. If the Administrator concludes that the petition of the source owner or operator presented information which, if true, would have altered the owner or operator's liability for a penalty, he shall upon notice to the State or local agent schedule a hearing in accordance with subpart E of part 66. Such notice shall operate as a withdrawal of EPA's delegation of authority to the State or local agent over the facility in question unless the State or local agent schedules a hearing within 15 days of receipt of the notice.

(c) If the Administrator concludes that the State determination did not conform to the requirements of the Act or of part 66 (as modified by § 67.11), he shall by written notice revoke the determination. Such revocation shall operate as a withdrawal of EPA's delegation of authority to the State or local agent over the facility in question. The source owner or operator may then petition for review of the Administrator's decision pursuant to the provisions of § 66.13.

(d) Unless otherwise provided in the Administrator's notice to the State or local agent, any noncompliance penalties owed by the source owner or operator shall be paid to the State or local agent. The Administrator shall send a copy of this notice to the source owner or operator.

**§ 67.33 Procedure where a formal State hearing was held.**

(a) In reviewing a decision that a source is in compliance with applicable legal requirements or is entitled to an exemption for which a hearing conforming to § 67.11(b) (4) or (6) was held, the Administrator may invite comment on issues identified by him as relevant to his review and shall propose or make findings as to the correctness of the determination and the accuracy and adequacy of the material transmitted pursuant to § 67.11(b)(5).

(b) The Administrator shall notify all participants in the State hearing of his findings and conclusions. If the Administrator concludes that the State determination conformed to the requirements of the Act and of part 66 (as modified by § 66.11), the Administrator's determination shall constitute final administrative action by EPA under authority of Section 120. If the Administrator finds that the State determination did not conform to the requirements of the Act and of part 66 (as modified by § 67.11), the findings shall constitute proposed findings and the notice shall invite participants to file exceptions thereto. If the Administrator considers it desirable, he may schedule a time for argument.

(c) Within 60 days of receipt of any briefs or exceptions or after oral argument pursuant to paragraph (b), the Administrator shall affirm, modify, or revoke his proposed findings that the State's determination did not conform to the requirements of the Act or of part 66 (as modified by § 67.11). The decision shall be in writing. Notice and a copy of the decision shall be provided to the source owner or operator and to all other participants in the State hearing. The decision shall constitute a final administrative action by EPA under authority of section 120.

(d) If the Administrator finds that deficiencies in the hearing record prevent him from determining whether the determination of the State or local agent conformed to the requirements of the Act and part 66 (as modified by § 67.11), he shall notify the State or local agent of his finding and specify what deficiencies exist and schedule a hearing pursuant to subpart E of part

66. Such notice shall operate as a withdrawal of EPA's delegation of authority to the State or local agent over the facility in question unless the State or local agent schedules a supplemental hearing to correct the deficiencies within 15 days of receipt of the notice.

(e) If the Administrator concludes that the source is in violation of applicable legal requirements or is not entitled to an exemption, or both, and unless otherwise ordered in the decision, the source owner or operator shall submit a penalty calculation to the State within 45 days of receipt of the notice of determination.

#### Subpart E—EPA Review of State Penalty Assessments

##### § 67.41 When EPA may review.

(a) The Administrator may on his own initiative or on petition review any initial, interim, or final penalty calculation made or approved by the State or local agent to determine whether it conforms to the requirements of the Act, of part 66, of the Technical Support Document and the Instruction Manual. The Administrator shall notify the State or local agent in writing of his intention to review the calculation within 60 days of receipt by EPA of the calculation or any item considered by the State in making or approving such calculation, whichever occurs later.

(b) No such State determination shall become final until the expiration of 90 days after the Administrator's receipt of the notice required by § 67.11(b)(5).

(1) If the Administrator does not issue a notice of intent to review within that period, the State determination shall, upon expiration of such period, constitute final action of the Administrator under section 120 of the Act.

(2) If the Administrator issues a notice of intent to review within that period, the State determination shall not become final until the Administrator takes final action after reviewing the determination.

(c) Except as otherwise provided, a State determination shall be approved if there was a reasonable basis in law and in fact for making the determination.

##### § 67.42 Procedure where no formal State hearing was held.

(a) In reviewing a penalty calculation for which no hearing conforming to the requirements of § 67.11(b)(4) was held, the Administrator shall evaluate the accuracy and adequacy of the data contained in the documents transmitted to him pursuant to § 67.11(b)(5) and shall invite comments on issues identified by him as relevant to his review.

(b) If the Administrator concludes that no hearing need have been held and that the State determination was correct, he shall notify the State, the source owner or operator, and other participants of his determination, which shall constitute final agency action by EPA under authority of section 120. If the Administrator concludes that the petition of the source owner or operator for reconsideration of a recalculation presented information which, if true, would have altered the amount of the penalty calculated, he shall upon notice to the State schedule a hearing in accordance with subpart F of part 66. Such notice shall operate as a withdrawal of EPA's delegation of authority to the State or local agent over the facility in question unless the State or local agent schedules a hearing within 15 days of receipt of the notice.

(c) If the Administrator concludes that the determination of the State or local agent not to hold a hearing was proper but that the penalty calculation does not conform to the requirements of the Act or of part 66, he shall by written notice revoke the determination and issue a notice of recalculation to the source owner or operator pursuant to § 66.51. A copy of the notice of recalculation shall be provided to the State or local agent. The notice of recalculation shall constitute final administrative action by EPA under authority of section 120 unless the source owner or operator petitions for reconsideration under § 66.52, in which case it shall operate as a withdrawal by EPA of its delegation of authority to the State or local agent over the facility in question.

(d) Unless otherwise provided in the Administrator's notice, noncompliance penalties finally determined to be owed

shall be paid to the State or local agent.

**§ 67.43 Procedure where a formal State hearing was held.**

(a) In reviewing a penalty calculation for which a hearing conforming to § 67.11(b)(4) was held, the Administrator may invite comment on issues identified by him as relevant to his review and shall propose or make findings as to the correctness of the determination and shall evaluate the accuracy and adequacy of the material transmitted pursuant to § 67.11(b)(5).

(b) The Administrator shall notify all participants in the State hearing of his findings and conclusions. If the Administrator finds that the State determination conformed to the requirements of the Act, part 66 (as modified by § 67.11), the Technical Support Document, and the Instruction Manual, his determination shall constitute a final action pursuant to section 120. If the Administrator finds that the State determination did not conform to the requirements of the Act or of part 66 (as modified by § 67.11) or to the Technical Support Document or Instruction Manual, the findings shall constitute proposed findings, and the notice shall invite participants to file exceptions to his proposed findings and, if necessary, schedule a time for argument.

(c) Within 60 days of receipt of any briefs or exceptions or after oral argument, the Administrator shall affirm, modify, or revoke his proposed findings that the State or local agent's determination did not conform to the requirements of the Act or of part 66 (as modified by § 67.11) or the Technical Support Document or Instruction Manual. The decision shall be in writing. Notice and a copy of the decision, which shall constitute final administrative action by EPA pursuant to section 120, shall be provided to the source owner or operator and to all other participants in the State hearing.

(d) If the Administrator finds that deficiencies in the State or local agent's hearing record prevent him from determining whether the State or local agent's determination conformed to the requirements of the Act and part 66 (as modified by § 67.11) or the Technical Support Document or Instruction

Manual, he shall notify the State or local agent of his decision and specify what deficiencies exist and schedule a hearing in accordance with subpart F of part 66. Such notice shall operate to withdraw EPA's delegation of authority to the State or local agent over the facility in question unless the State or local agent within 15 days schedules a supplemental hearing to correct the deficiencies.

(e) Unless otherwise provided in the Administrator's notice to the State or local agent, any noncompliance penalties owed by the source owner or operator shall be paid to the State or local agent.

**APPENDIX A TO PART 67—TECHNICAL SUPPORT DOCUMENT**

NOTE: EPA will make copies of appendix A available from: Director, Stationary Source Compliance Division, EN-341, 401 M Street, SW., Washington, DC 20460.  
[54 FR 25259, June 20, 1989]

**APPENDIX B TO PART 67—INSTRUCTION MANUAL**

NOTE: EPA will make copies of appendix B available from: Director, Stationary Source Compliance Division, EN-341, 401 M Street, SW., Washington, DC 20460.  
[54 FR 25259, June 20, 1989]

**APPENDIX C TO PART 67—COMPUTER PROGRAM**

NOTE: EPA will make copies of appendix C available from: Director, Stationary Source Compliance Division, EN-341, 401 M Street, SW., Washington, DC 20460.  
[54 FR 25259, June 20, 1989]

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## APPENDIX A TO PART 68—TABLE OF TOXIC ENDPOINTS

AUTHORITY: 42 U.S.C. 7412(r), 7601(a)(1), 7661-7661f.

SOURCE: 59 FR 4493, Jan. 31, 1994, unless otherwise noted.

## Subpart A—General

### § 68.1 Scope.

This part sets forth the list of regulated substances and thresholds, the petition process for adding or deleting substances to the list of regulated substances, the requirements for owners or operators of stationary sources concerning the prevention of accidental releases, and the State accidental release prevention programs approved under section 112(r). The list of substances, threshold quantities, and accident prevention regulations promulgated under this part do not limit in any way the general duty provisions under section 112(r)(1).

### § 68.2 Stayed provisions.

(a) Notwithstanding any other provision of this part, the effectiveness of the following provisions is stayed from March 2, 1994 to December 22, 1997.

(1) In Sec. 68.3, the definition of “stationary source,” to the extent that such definition includes naturally occurring hydrocarbon reservoirs or transportation subject to oversight or regulation under a state natural gas or hazardous liquid program for which the state has in effect a certification to DOT under 49 U.S.C. 60105;

(2) Section 68.115(b)(2) of this part, to the extent that such provision requires an owner or operator to treat as a regulated flammable substance:

(i) Gasoline, when in distribution or related storage for use as fuel for internal combustion engines;

(ii) Naturally occurring hydrocarbon mixtures prior to entry into a petroleum refining process unit or a natural gas processing plant. Naturally occurring hydrocarbon mixtures include any of the following: condensate, crude oil, field gas, and produced water, each as defined in paragraph (b) of this section;

(iii) Other mixtures that contain a regulated flammable substance and

that do not have a National Fire Protection Association flammability hazard rating of 4, the definition of which is in the NFPA 704, Standard System for the Identification of the Fire Hazards of Materials, National Fire Protection Association, Quincy, MA, 1990, available from the National Fire Protection Association, 1 Batterymarch Park, Quincy, MA 02269-9101; and

(3) Section 68.130(a).

(b) From March 2, 1994 to December 22, 1997, the following definitions shall apply to the stayed provisions described in paragraph (a) of this section:

*Condensate* means hydrocarbon liquid separated from natural gas that condenses because of changes in temperature, pressure, or both, and remains liquid at standard conditions.

*Crude oil* means any naturally occurring, unrefined petroleum liquid.

*Field gas* means gas extracted from a production well before the gas enters a natural gas processing plant.

*Natural gas processing plant* means any processing site engaged in the extraction of natural gas liquids from field gas, fractionation of natural gas liquids to natural gas products, or both. A separator, dehydration unit, heater treater, sweetening unit, compressor, or similar equipment shall not be considered a "processing site" unless such equipment is physically located within a natural gas processing plant (gas plant) site.

*Petroleum refining process unit* means a process unit used in an establishment primarily engaged in petroleum refining as defined in the Standard Industrial Classification code for petroleum refining (2911) and used for the following: Producing transportation fuels (such as gasoline, diesel fuels, and jet fuels), heating fuels (such as kerosene, fuel gas distillate, and fuel oils), or lubricants; separating petroleum; or separating, cracking, reacting, or reforming intermediate petroleum streams. Examples of such units include, but are not limited to, petroleum based solvent units, alkylation units, catalytic hydrotreating, catalytic hydrorefining, catalytic hydrocracking, catalytic reforming, catalytic cracking, crude distillation, lube oil processing, hydrogen production, isomerization, polymerization, thermal processes, and blending,

sweetening, and treating processes. Petroleum refining process units include sulfur plants.

*Produced water* means water extracted from the earth from an oil or natural gas production well, or that is separated from oil or natural gas after extraction.

[59 FR 4493, Jan. 31, 1994, as amended at 61 FR 31731, June 20, 1996]

### § 68.3 Definitions.

For the purposes of this part:

*Accidental release* means an unanticipated emission of a regulated substance or other extremely hazardous substance into the ambient air from a stationary source.

*Act* means the Clean Air Act as amended (42 U.S.C. 7401 *et seq.*)

*Administrative controls* mean written procedural mechanisms used for hazard control.

*Administrator* means the administrator of the U.S. Environmental Protection Agency.

*AICHE/CCPS* means the American Institute of Chemical Engineers/Center for Chemical Process Safety.

*API* means the American Petroleum Institute.

*Article* means a manufactured item, as defined under 29 CFR 1910.1200(b), that is formed to a specific shape or design during manufacture, that has end use functions dependent in whole or in part upon the shape or design during end use, and that does not release or otherwise result in exposure to a regulated substance under normal conditions of processing and use.

*ASME* means the American Society of Mechanical Engineers.

*CAS* means the Chemical Abstracts Service.

*Catastrophic release* means a major uncontrolled emission, fire, or explosion, involving one or more regulated substances that presents imminent and substantial endangerment to public health and the environment.

*Classified information* means "classified information" as defined in the Classified Information Procedures Act, 18 U.S.C. App. 3, section 1(a) as "any information or material that has been determined by the United States Government pursuant to an executive order, statute, or regulation, to require

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protection against unauthorized disclosure for reasons of national security.”

*Covered process* means a process that has a regulated substance present in more than a threshold quantity as determined under §68.115.

*Designated agency* means the state, local, or Federal agency designated by the state under the provisions of §68.215(d).

*DOT* means the United States Department of Transportation.

*Environmental receptor* means natural areas such as national or state parks, forests, or monuments; officially designated wildlife sanctuaries, preserves, refuges, or areas; and Federal wilderness areas, that could be exposed at any time to toxic concentrations, radiant heat, or overpressure greater than or equal to the endpoints provided in §68.22(a), as a result of an accidental release and that can be identified on local U. S. Geological Survey maps.

*Hot work* means work involving electric or gas welding, cutting, brazing, or similar flame or spark-producing operations.

*Implementing agency* means the state or local agency that obtains delegation for an accidental release prevention program under subpart E, 40 CFR part 63. The implementing agency may, but is not required to, be the state or local air permitting agency. If no state or local agency is granted delegation, EPA will be the implementing agency for that state.

*Injury* means any effect on a human that results either from direct exposure to toxic concentrations; radiant heat; or overpressures from accidental releases or from the direct consequences of a vapor cloud explosion (such as flying glass, debris, and other projectiles) from an accidental release and that requires medical treatment or hospitalization.

*Major change* means introduction of a new process, process equipment, or regulated substance, an alteration of process chemistry that results in any change to safe operating limits, or other alteration that introduces a new hazard.

*Mechanical integrity* means the process of ensuring that process equipment is fabricated from the proper materials of construction and is properly in-

stalled, maintained, and replaced to prevent failures and accidental releases.

*Medical treatment* means treatment, other than first aid, administered by a physician or registered professional personnel under standing orders from a physician.

*Mitigation or mitigation system* means specific activities, technologies, or equipment designed or deployed to capture or control substances upon loss of containment to minimize exposure of the public or the environment. Passive mitigation means equipment, devices, or technologies that function without human, mechanical, or other energy input. Active mitigation means equipment, devices, or technologies that need human, mechanical, or other energy input to function.

*NFPA* means the National Fire Protection Association.

*Offsite* means areas beyond the property boundary of the stationary source, and areas within the property boundary to which the public has routine and unrestricted access during or outside business hours.

*OSHA* means the U.S. Occupational Safety and Health Administration. Owner or operator means any person who owns, leases, operates, controls, or supervises a stationary source.

*Population* means the public.

*Process* means any activity involving a regulated substance including any use, storage, manufacturing, handling, or on-site movement of such substances, or combination of these activities. For the purposes of this definition, any group of vessels that are interconnected, or separate vessels that are located such that a regulated substance could be involved in a potential release, shall be considered a single process.

*Public* means any person except employees or contractors at the stationary source.

*Public receptor* means offsite residences, institutions (e.g., schools, hospitals), industrial, commercial, and office buildings, parks, or recreational areas inhabited or occupied by the public at any time without restriction by the stationary source where members of the public could be exposed to toxic

concentrations, radiant heat, or overpressure, as a result of an accidental release.

*Regulated substance* is any substance listed pursuant to section 112(r)(3) of the Clean Air Act as amended, in § 68.130.

*Replacement in kind* means a replacement that satisfies the design specifications.

*RMP* means the risk management plan required under subpart G of this part.

*SIC* means Standard Industrial Classification.

*Stationary source* means any buildings, structures, equipment, installations, or substance emitting stationary activities which belong to the same industrial group, which are located on one or more contiguous properties, which are under the control of the same person (or persons under common control), and from which an accidental release may occur. A stationary source includes transportation containers that are no longer under active shipping papers and transportation containers that are connected to equipment at the stationary source for the purposes of temporary storage, loading, or unloading. The term stationary source does not apply to transportation, including the storage incident to transportation, of any regulated substance or any other extremely hazardous substance under the provisions of this part, provided that such transportation is regulated under 49 CFR parts 192, 193, or 195. Properties shall not be considered contiguous solely because of a railroad or gas pipeline right-of-way.

*Threshold quantity* means the quantity specified for regulated substances pursuant to section 112(r)(5) of the Clean Air Act as amended, listed in § 68.130 and determined to be present at a stationary source as specified in § 68.115 of this part.

*Typical meteorological conditions* means the temperature, wind speed, cloud cover, and atmospheric stability class, prevailing at the site based on data gathered at or near the site or from a local meteorological station.

*Vessel* means any reactor, tank, drum, barrel, cylinder, vat, kettle, boiler, pipe, hose, or other container.

*Worst-case release* means the release of the largest quantity of a regulated substance from a vessel or process line failure that results in the greatest distance to an endpoint defined in § 68.22(a).

[59 FR 4493, Jan. 31, 1994, as amended at 61 FR 31717, June 20, 1996]

EFFECTIVE DATE NOTE: At 61 FR 31717, June 20, 1996, § 68.3 was amended by adding the definitions for *Act*, *Administrative controls*, *AICHe/CCPS*, *API*, *ASME*, *Catastrophic release*, *Classified information*, *Covered process*, *Designated agency*, *Environmental receptor*, *Hot work*, *Implementing agency*, *Injury*, *Major change*, *Mechanical integrity*, *Medical treatment*, *Mitigation or mitigation system*, *NFPA*, *Offsite*, *OSHA*, *Population*, *Public*, *Public receptor*, *Replacement in kind*, *RMP*, *SIC*, *Typical meteorological conditions*, and *Worst-case release*, effective Aug. 19, 1996.

#### § 68.10 Applicability.

(a) An owner or operator of a stationary source that has more than a threshold quantity of a regulated substance in a process, as determined under § 68.115, shall comply with the requirements of this part no later than the latest of the following dates:

- (1) June 21, 1999;
- (2) Three years after the date on which a regulated substance is first listed under § 68.130; or
- (3) The date on which a regulated substance is first present above a threshold quantity in a process.

(b) Program 1 eligibility requirements. A covered process is eligible for Program 1 requirements as provided in § 68.12(b) if it meets all of the following requirements:

(1) For the five years prior to the submission of an RMP, the process has not had an accidental release of a regulated substance where exposure to the substance, its reaction products, overpressure generated by an explosion involving the substance, or radiant heat generated by a fire involving the substance led to any of the following off-site:

- (i) Death;
  - (ii) Injury; or
  - (iii) Response or restoration activities for an exposure of an environmental receptor;
- (2) The distance to a toxic or flammable endpoint for a worst-case release assessment conducted under Subpart B

and § 68.25 is less than the distance to any public receptor, as defined in § 68.30; and

(3) Emergency response procedures have been coordinated between the stationary source and local emergency planning and response organizations.

(c) Program 2 eligibility requirements. A covered process is subject to Program 2 requirements if it does not meet the eligibility requirements of either paragraph (b) or paragraph (d) of this section.

(d) Program 3 eligibility requirements. A covered process is subject to Program 3 if the process does not meet the requirements of paragraph (b) of this section, and if either of the following conditions is met:

(1) The process is in SIC code 2611, 2812, 2819, 2821, 2865, 2869, 2873, 2879, or 2911; or

(2) The process is subject to the OSHA process safety management standard, 29 CFR 1910.119.

(e) If at any time a covered process no longer meets the eligibility criteria of its Program level, the owner or operator shall comply with the requirements of the new Program level that applies to the process and update the RMP as provided in § 68.190.

[61 FR 31717, June 20, 1996]

EFFECTIVE DATE NOTE: At 61 FR 31717, June 20, 1996, § 68.10 was added, effective Aug. 19, 1996.

#### § 68.12 General requirements.

(a) General requirements. The owner or operator of a stationary source subject to this part shall submit a single RMP, as provided in §§ 68.150 to 68.185. The RMP shall include a registration that reflects all covered processes.

(b) Program 1 requirements. In addition to meeting the requirements of paragraph (a) of this section, the owner or operator of a stationary source with a process eligible for Program 1, as provided in § 68.10(b), shall:

(1) Analyze the worst-case release scenario for the process(es), as provided in § 68.25; document that the nearest public receptor is beyond the distance to a toxic or flammable endpoint defined in § 68.22(a); and submit in the RMP the worst-case release scenario as provided in § 68.165;

(2) Complete the five-year accident history for the process as provided in § 68.42 of this part and submit it in the RMP as provided in § 68.168;

(3) Ensure that response actions have been coordinated with local emergency planning and response agencies; and

(4) Certify in the RMP the following: “Based on the criteria in 40 CFR 68.10, the distance to the specified endpoint for the worst-case accidental release scenario for the following process(es) is less than the distance to the nearest public receptor: [list process(es)]. Within the past five years, the process(es) has (have) had no accidental release that caused offsite impacts provided in the risk management program rule (40 CFR 68.10(b)(1)). No additional measures are necessary to prevent offsite impacts from accidental releases. In the event of fire, explosion, or a release of a regulated substance from the process(es), entry within the distance to the specified endpoints may pose a danger to public emergency responders. Therefore, public emergency responders should not enter this area except as arranged with the emergency contact indicated in the RMP. The undersigned certifies that, to the best of my knowledge, information, and belief, formed after reasonable inquiry, the information submitted is true, accurate, and complete. [Signature, title, date signed].”

(c) Program 2 requirements. In addition to meeting the requirements of paragraph (a) of this section, the owner or operator of a stationary source with a process subject to Program 2, as provided in § 68.10(c), shall:

(1) Develop and implement a management system as provided in § 68.15;

(2) Conduct a hazard assessment as provided in §§ 68.20 through 68.42;

(3) Implement the Program 2 prevention steps provided in §§ 68.48 through 68.60 or implement the Program 3 prevention steps provided in §§ 68.65 through 68.87;

(4) Develop and implement an emergency response program as provided in §§ 68.90 to 68.95; and

(5) Submit as part of the RMP the data on prevention program elements for Program 2 processes as provided in § 68.170.

(d) Program 3 requirements. In addition to meeting the requirements of paragraph (a) of this section, the owner or operator of a stationary source with a process subject to Program 3, as provided in § 68.10(d) shall:

- (1) Develop and implement a management system as provided in § 68.15;
- (2) Conduct a hazard assessment as provided in §§ 68.20 through 68.42;
- (3) Implement the prevention requirements of §§ 68.65 through 68.87;
- (4) Develop and implement an emergency response program as provided in §§ 68.90 to 68.95 of this part; and
- (5) Submit as part of the RMP the data on prevention program elements for Program 3 processes as provided in § 68.175.

[61 FR 31718, June 20, 1996]

EFFECTIVE DATE NOTE: At 61 FR 31718, June 20, 1996, § 68.12 was added, effective Aug. 19, 1996.

#### § 68.15 Management.

(a) The owner or operator of a stationary source with processes subject to Program 2 or Program 3 shall develop a management system to oversee the implementation of the risk management program elements.

(b) The owner or operator shall assign a qualified person or position that has the overall responsibility for the development, implementation, and integration of the risk management program elements.

(c) When responsibility for implementing individual requirements of this part is assigned to persons other than the person identified under paragraph (b) of this section, the names or positions of these people shall be documented and the lines of authority defined through an organization chart or similar document.

[61 FR 31718, June 20, 1996]

EFFECTIVE DATE NOTE: At 61 FR 31718, June 20, 1996, § 68.15 was added, effective Aug. 19, 1996.

### Subpart B—Hazard Assessment

SOURCE: 61 FR 31718, June 20, 1996, unless otherwise noted.

EFFECTIVE DATE NOTE: At 61 FR 31718, June 20, 1996, subpart B was added, effective Aug. 19, 1996.

#### § 68.20 Applicability.

The owner or operator of a stationary source subject to this part shall prepare a worst-case release scenario analysis as provided in § 68.25 of this part and complete the five-year accident history as provided in § 68.42. The owner or operator of a Program 2 and 3 process must comply with all sections in this subpart for these processes.

#### § 68.22 Offsite consequence analysis parameters.

(a) Endpoints. For analyses of offsite consequences, the following endpoints shall be used:

(1) Toxics. The toxic endpoints provided in appendix A of this part.

(2) Flammables. The endpoints for flammables vary according to the scenarios studied:

(i) Explosion. An overpressure of 1 psi.

(ii) Radiant heat/exposure time. A radiant heat of 5 kw/m<sup>2</sup> for 40 seconds.

(iii) Lower flammability limit. A lower flammability limit as provided in NFPA documents or other generally recognized sources.

(b) Wind speed/atmospheric stability class. For the worst-case release analysis, the owner or operator shall use a wind speed of 1.5 meters per second and F atmospheric stability class. If the owner or operator can demonstrate that local meteorological data applicable to the stationary source show a higher minimum wind speed or less stable atmosphere at all times during the previous three years, these minimums may be used. For analysis of alternative scenarios, the owner or operator may use the typical meteorological conditions for the stationary source.

(c) Ambient temperature/humidity. For worst-case release analysis of a regulated toxic substance, the owner or operator shall use the highest daily maximum temperature in the previous three years and average humidity for the site, based on temperature/humidity data gathered at the stationary source or at a local meteorological station; an owner or operator using the RMP Offsite Consequence Analysis Guidance may use 25°C and 50 percent humidity as values for these variables. For analysis of alternative scenarios, the owner or operator may use typical

temperature/humidity data gathered at the stationary source or at a local meteorological station.

(d) Height of release. The worst-case release of a regulated toxic substance shall be analyzed assuming a ground level (0 feet) release. For an alternative scenario analysis of a regulated toxic substance, release height may be determined by the release scenario.

(e) Surface roughness. The owner or operator shall use either urban or rural topography, as appropriate. Urban means that there are many obstacles in the immediate area; obstacles include buildings or trees. Rural means there are no buildings in the immediate area and the terrain is generally flat and unobstructed.

(f) Dense or neutrally buoyant gases. The owner or operator shall ensure that tables or models used for dispersion analysis of regulated toxic substances appropriately account for gas density.

(g) Temperature of released substance. For worst case, liquids other than gases liquified by refrigeration only shall be considered to be released at the highest daily maximum temperature, based on data for the previous three years appropriate for the stationary source, or at process temperature, whichever is higher. For alternative scenarios, substances may be considered to be released at a process or ambient temperature that is appropriate for the scenario.

**§ 68.25 Worst-case release scenario analysis.**

(a) The owner or operator shall analyze and report in the RMP:

(1) For Program 1 processes, one worst-case release scenario for each Program 1 process;

(2) For Program 2 and 3 processes:

(i) One worst-case release scenario that is estimated to create the greatest distance in any direction to an endpoint provided in appendix A of this part resulting from an accidental release of regulated toxic substances from covered processes under worst-case conditions defined in § 68.22;

(ii) One worst-case release scenario that is estimated to create the greatest distance in any direction to an endpoint defined in § 68.22(a) resulting

from an accidental release of regulated flammable substances from covered processes under worst-case conditions defined in § 68.22; and

(iii) Additional worst-case release scenarios for a hazard class if a worst-case release from another covered process at the stationary source potentially affects public receptors different from those potentially affected by the worst-case release scenario developed under paragraphs (a)(2)(i) or (a)(2)(ii) of this section.

(b) *Determination of worst-case release quantity.* The worst-case release quantity shall be the greater of the following:

(1) For substances in a vessel, the greatest amount held in a single vessel, taking into account administrative controls that limit the maximum quantity; or

(2) For substances in pipes, the greatest amount in a pipe, taking into account administrative controls that limit the maximum quantity.

(c) *Worst-case release scenario—toxic gases.* (1) For regulated toxic substances that are normally gases at ambient temperature and handled as a gas or as a liquid under pressure, the owner or operator shall assume that the quantity in the vessel or pipe, as determined under paragraph (b) of this section, is released as a gas over 10 minutes. The release rate shall be assumed to be the total quantity divided by 10 unless passive mitigation systems are in place.

(2) For gases handled as refrigerated liquids at ambient pressure:

(i) If the released substance is not contained by passive mitigation systems or if the contained pool would have a depth of 1 cm or less, the owner or operator shall assume that the substance is released as a gas in 10 minutes;

(ii) If the released substance is contained by passive mitigation systems in a pool with a depth greater than 1 cm, the owner or operator may assume that the quantity in the vessel or pipe, as determined under paragraph (b) of this section, is spilled instantaneously

to form a liquid pool. The volatilization rate (release rate) shall be calculated at the boiling point of the substance and at the conditions specified in paragraph (d) of this section.

(d) *Worst-case release scenario—toxic liquids.* (1) For regulated toxic substances that are normally liquids at ambient temperature, the owner or operator shall assume that the quantity in the vessel or pipe, as determined under paragraph (b) of this section, is spilled instantaneously to form a liquid pool.

(i) The surface area of the pool shall be determined by assuming that the liquid spreads to 1 centimeter deep unless passive mitigation systems are in place that serve to contain the spill and limit the surface area. Where passive mitigation is in place, the surface area of the contained liquid shall be used to calculate the volatilization rate.

(ii) If the release would occur onto a surface that is not paved or smooth, the owner or operator may take into account the actual surface characteristics.

(2) The volatilization rate shall account for the highest daily maximum temperature occurring in the past three years, the temperature of the substance in the vessel, and the concentration of the substance if the liquid spilled is a mixture or solution.

(3) The rate of release to air shall be determined from the volatilization rate of the liquid pool. The owner or operator may use the methodology in the RMP Offsite Consequence Analysis Guidance or any other publicly available techniques that account for the modeling conditions and are recognized by industry as applicable as part of current practices. Proprietary models that account for the modeling conditions may be used provided the owner or operator allows the implementing agency access to the model and describes model features and differences from publicly available models to local emergency planners upon request.

(e) *Worst-case release scenario—flammables.* The owner or operator shall assume that the quantity of the substance, as determined under paragraph (b) of this section, vaporizes resulting in a vapor cloud explosion. A yield fac-

tor of 10 percent of the available energy released in the explosion shall be used to determine the distance to the explosion endpoint if the model used is based on TNT-equivalent methods.

(f) *Parameters to be applied.* The owner or operator shall use the parameters defined in §68.22 to determine distance to the endpoints. The owner or operator may use the methodology provided in the RMP Offsite Consequence Analysis Guidance or any commercially or publicly available air dispersion modeling techniques, provided the techniques account for the modeling conditions and are recognized by industry as applicable as part of current practices. Proprietary models that account for the modeling conditions may be used provided the owner or operator allows the implementing agency access to the model and describes model features and differences from publicly available models to local emergency planners upon request.

(g) *Consideration of passive mitigation.* Passive mitigation systems may be considered for the analysis of worst case provided that the mitigation system is capable of withstanding the release event triggering the scenario and would still function as intended.

(h) *Factors in selecting a worst-case scenario.* Notwithstanding the provisions of paragraph (b) of this section, the owner or operator shall select as the worst case for flammable regulated substances or the worst case for regulated toxic substances, a scenario based on the following factors if such a scenario would result in a greater distance to an endpoint defined in §68.22(a) beyond the stationary source boundary than the scenario provided under paragraph (b) of this section:

(1) Smaller quantities handled at higher process temperature or pressure; and

(2) Proximity to the boundary of the stationary source.

**§68.28 Alternative release scenario analysis.**

(a) The number of scenarios. The owner or operator shall identify and analyze at least one alternative release scenario for each regulated toxic substance held in a covered process(es) and

at least one alternative release scenario to represent all flammable substances held in covered processes.

(b) *Scenarios to consider.* (1) For each scenario required under paragraph (a) of this section, the owner or operator shall select a scenario:

(i) That is more likely to occur than the worst-case release scenario under §68.25; and

(ii) That will reach an endpoint off-site, unless no such scenario exists.

(2) Release scenarios considered should include, but are not limited to, the following, where applicable:

(i) Transfer hose releases due to splits or sudden hose uncoupling;

(ii) Process piping releases from failures at flanges, joints, welds, valves and valve seals, and drains or bleeds;

(iii) Process vessel or pump releases due to cracks, seal failure, or drain, bleed, or plug failure;

(iv) Vessel overfilling and spill, or overpressurization and venting through relief valves or rupture disks; and

(v) Shipping container mishandling and breakage or puncturing leading to a spill.

(c) Parameters to be applied. The owner or operator shall use the appropriate parameters defined in §68.22 to determine distance to the endpoints. The owner or operator may use either the methodology provided in the RMP Offsite Consequence Analysis Guidance or any commercially or publicly available air dispersion modeling techniques, provided the techniques account for the specified modeling conditions and are recognized by industry as applicable as part of current practices. Proprietary models that account for the modeling conditions may be used provided the owner or operator allows the implementing agency access to the model and describes model features and differences from publicly available models to local emergency planners upon request.

(d) Consideration of mitigation. Active and passive mitigation systems may be considered provided they are capable of withstanding the event that triggered the release and would still be functional.

(e) Factors in selecting scenarios. The owner or operator shall consider

the following in selecting alternative release scenarios:

(1) The five-year accident history provided in §68.42; and

(2) Failure scenarios identified under §68.50 or §68.67.

#### **§68.30 Defining offsite impacts—population.**

(a) The owner or operator shall estimate in the RMP the population within a circle with its center at the point of the release and a radius determined by the distance to the endpoint defined in §68.22(a).

(b) *Population to be defined.* Population shall include residential population. The presence of institutions (schools, hospitals, prisons), parks and recreational areas, and major commercial, office, and industrial buildings shall be noted in the RMP.

(c) *Data sources acceptable.* The owner or operator may use the most recent Census data, or other updated information, to estimate the population potentially affected.

(d) *Level of accuracy.* Population shall be estimated to two significant digits.

#### **§68.33 Defining offsite impacts—environment.**

(a) The owner or operator shall list in the RMP environmental receptors within a circle with its center at the point of the release and a radius determined by the distance to the endpoint defined in §68.22(a) of this part.

(b) *Data sources acceptable.* The owner or operator may rely on information provided on local U.S. Geological Survey maps or on any data source containing U.S.G.S. data to identify environmental receptors.

#### **68.36 Review and update.**

(a) The owner or operator shall review and update the offsite consequence analyses at least once every five years.

(b) If changes in processes, quantities stored or handled, or any other aspect of the stationary source might reasonably be expected to increase or decrease the distance to the endpoint by a factor of two or more, the owner or operator shall complete a revised analysis within six months of the change

and submit a revised risk management plan as provided in § 68.190.

**§ 68.39 Documentation.**

The owner or operator shall maintain the following records on the offsite consequence analyses:

(a) For worst-case scenarios, a description of the vessel or pipeline and substance selected as worst case, assumptions and parameters used, and the rationale for selection; assumptions shall include use of any administrative controls and any passive mitigation that were assumed to limit the quantity that could be released. Documentation shall include the anticipated effect of the controls and mitigation on the release quantity and rate.

(b) For alternative release scenarios, a description of the scenarios identified, assumptions and parameters used, and the rationale for the selection of specific scenarios; assumptions shall include use of any administrative controls and any mitigation that were assumed to limit the quantity that could be released. Documentation shall include the effect of the controls and mitigation on the release quantity and rate.

(c) Documentation of estimated quantity released, release rate, and duration of release.

(d) Methodology used to determine distance to endpoints.

(e) Data used to estimate population and environmental receptors potentially affected.

**§ 68.42 Five-year accident history.**

(a) The owner or operator shall include in the five-year accident history all accidental releases from covered processes that resulted in deaths, injuries, or significant property damage on site, or known offsite deaths, injuries, evacuations, sheltering in place, property damage, or environmental damage.

(b) *Data required.* For each accidental release included, the owner or operator shall report the following information:

- (1) Date, time, and approximate duration of the release;
- (2) Chemical(s) released;
- (3) Estimated quantity released in pounds;

(4) The type of release event and its source;

(5) Weather conditions, if known;

(6) On-site impacts;

(7) Known offsite impacts;

(8) Initiating event and contributing factors if known;

(9) Whether offsite responders were notified if known; and

(10) Operational or process changes that resulted from investigation of the release.

(c) *Level of accuracy.* Numerical estimates may be provided to two significant digits.

**Subpart C—Program 2 Prevention Program**

SOURCE: 61 FR 31721, June 20, 1996, unless otherwise noted.

EFFECTIVE DATE NOTE: At 61 FR 31721, June 20, 1996, subpart C was added, effective Aug. 19, 1996.

**§ 68.48 Safety information.**

(a) The owner or operator shall compile and maintain the following up-to-date safety information related to the regulated substances, processes, and equipment:

(1) Material Safety Data Sheets that meet the requirements of 29 CFR 1910.1200(g);

(2) Maximum intended inventory of equipment in which the regulated substances are stored or processed;

(3) Safe upper and lower temperatures, pressures, flows, and compositions;

(4) Equipment specifications; and

(5) Codes and standards used to design, build, and operate the process.

(b) The owner or operator shall ensure that the process is designed in compliance with recognized and generally accepted good engineering practices. Compliance with Federal or state regulations that address industry-specific safe design or with industry-specific design codes and standards may be used to demonstrate compliance with this paragraph.

(c) The owner or operator shall update the safety information if a major change occurs that makes the information inaccurate.

**§ 68.50 Hazard review.**

(a) The owner or operator shall conduct a review of the hazards associated with the regulated substances, process, and procedures. The review shall identify the following:

- (1) The hazards associated with the process and regulated substances;
- (2) Opportunities for equipment malfunctions or human errors that could cause an accidental release;
- (3) The safeguards used or needed to control the hazards or prevent equipment malfunction or human error; and
- (4) Any steps used or needed to detect or monitor releases.

(b) The owner or operator may use checklists developed by persons or organizations knowledgeable about the process and equipment as a guide to conducting the review. For processes designed to meet industry standards or Federal or state design rules, the hazard review shall, by inspecting all equipment, determine whether the process is designed, fabricated, and operated in accordance with the applicable standards or rules.

(c) The owner or operator shall document the results of the review and ensure that problems identified are resolved in a timely manner.

(d) The review shall be updated at least once every five years. The owner or operator shall also conduct reviews whenever a major change in the process occurs; all issues identified in the review shall be resolved before startup of the changed process.

**§ 68.52 Operating procedures.**

(a) The owner or operator shall prepare written operating procedures that provide clear instructions or steps for safely conducting activities associated with each covered process consistent with the safety information for that process. Operating procedures or instructions provided by equipment manufacturers or developed by persons or organizations knowledgeable about the process and equipment may be used as a basis for a stationary source's operating procedures.

(b) The procedures shall address the following:

- (1) Initial startup;
- (2) Normal operations;
- (3) Temporary operations;

(4) Emergency shutdown and operations;

(5) Normal shutdown;

(6) Startup following a normal or emergency shutdown or a major change that requires a hazard review;

(7) Consequences of deviations and steps required to correct or avoid deviations; and

(8) Equipment inspections.

(c) The owner or operator shall ensure that the operating procedures are updated, if necessary, whenever a major change occurs and prior to startup of the changed process.

**§ 68.54 Training.**

(a) The owner or operator shall ensure that each employee presently operating a process, and each employee newly assigned to a covered process have been trained or tested competent in the operating procedures provided in § 68.52 that pertain to their duties. For those employees already operating a process on June 21, 1999, the owner or operator may certify in writing that the employee has the required knowledge, skills, and abilities to safely carry out the duties and responsibilities as provided in the operating procedures.

(b) Refresher training. Refresher training shall be provided at least every three years, and more often if necessary, to each employee operating a process to ensure that the employee understands and adheres to the current operating procedures of the process. The owner or operator, in consultation with the employees operating the process, shall determine the appropriate frequency of refresher training.

(c) The owner or operator may use training conducted under Federal or state regulations or under industry-specific standards or codes or training conducted by covered process equipment vendors to demonstrate compliance with this section to the extent that the training meets the requirements of this section.

(d) The owner or operator shall ensure that operators are trained in any updated or new procedures prior to startup of a process after a major change.

**§ 68.56 Maintenance.**

(a) The owner or operator shall prepare and implement procedures to maintain the on-going mechanical integrity of the process equipment. The owner or operator may use procedures or instructions provided by covered process equipment vendors or procedures in Federal or state regulations or industry codes as the basis for stationary source maintenance procedures.

(b) The owner or operator shall train or cause to be trained each employee involved in maintaining the on-going mechanical integrity of the process. To ensure that the employee can perform the job tasks in a safe manner, each such employee shall be trained in the hazards of the process, in how to avoid or correct unsafe conditions, and in the procedures applicable to the employee's job tasks.

(c) Any maintenance contractor shall ensure that each contract maintenance employee is trained to perform the maintenance procedures developed under paragraph (a) of this section.

(d) The owner or operator shall perform or cause to be performed inspections and tests on process equipment. Inspection and testing procedures shall follow recognized and generally accepted good engineering practices. The frequency of inspections and tests of process equipment shall be consistent with applicable manufacturers' recommendations, industry standards or codes, good engineering practices, and prior operating experience.

**§ 68.58 Compliance audits.**

(a) The owner or operator shall certify that they have evaluated compliance with the provisions of this subpart at least every three years to verify that the procedures and practices developed under the rule are adequate and are being followed.

(b) The compliance audit shall be conducted by at least one person knowledgeable in the process.

(c) The owner or operator shall develop a report of the audit findings.

(d) The owner or operator shall promptly determine and document an appropriate response to each of the findings of the compliance audit and document that deficiencies have been corrected.

(e) The owner or operator shall retain the two (2) most recent compliance audit reports. This requirement does not apply to any compliance audit report that is more than five years old.

**§ 68.60 Incident investigation.**

(a) The owner or operator shall investigate each incident which resulted in, or could reasonably have resulted in a catastrophic release.

(b) An incident investigation shall be initiated as promptly as possible, but not later than 48 hours following the incident.

(c) A summary shall be prepared at the conclusion of the investigation which includes at a minimum:

- (1) Date of incident;
- (2) Date investigation began;
- (3) A description of the incident;
- (4) The factors that contributed to the incident; and,
- (5) Any recommendations resulting from the investigation.

(d) The owner or operator shall promptly address and resolve the investigation findings and recommendations. Resolutions and corrective actions shall be documented.

(e) The findings shall be reviewed with all affected personnel whose job tasks are affected by the findings.

(f) Investigation summaries shall be retained for five years.

**Subpart D—Program 3 Prevention Program**

SOURCE: 61 FR 31722, June 20, 1996, unless otherwise noted.

EFFECTIVE DATE NOTE: At 61 FR 31722, June 20, 1996, subpart D was added, effective Aug. 19, 1996.

**§ 68.65 Process safety information.**

(a) In accordance with the schedule set forth in § 68.67, the owner or operator shall complete a compilation of written process safety information before conducting any process hazard analysis required by the rule. The compilation of written process safety information is to enable the owner or operator and the employees involved in operating the process to identify and understand the hazards posed by those processes involving regulated substances.

This process safety information shall include information pertaining to the hazards of the regulated substances used or produced by the process, information pertaining to the technology of the process, and information pertaining to the equipment in the process.

(b) Information pertaining to the hazards of the regulated substances in the process. This information shall consist of at least the following:

- (1) Toxicity information;
- (2) Permissible exposure limits;
- (3) Physical data;
- (4) Reactivity data;
- (5) Corrosivity data;
- (6) Thermal and chemical stability data; and

(7) Hazardous effects of inadvertent mixing of different materials that could foreseeably occur.

NOTE TO PARAGRAPH (B): Material Safety Data Sheets meeting the requirements of 29 CFR 1910.1200(g) may be used to comply with this requirement to the extent they contain the information required by this subparagraph.

(c) Information pertaining to the technology of the process.

(1) Information concerning the technology of the process shall include at least the following:

- (i) A block flow diagram or simplified process flow diagram;
- (ii) Process chemistry;
- (iii) Maximum intended inventory;
- (iv) Safe upper and lower limits for such items as temperatures, pressures, flows or compositions; and,
- (v) An evaluation of the consequences of deviations.

(2) Where the original technical information no longer exists, such information may be developed in conjunction with the process hazard analysis in sufficient detail to support the analysis.

(d) Information pertaining to the equipment in the process.

(1) Information pertaining to the equipment in the process shall include:

- (i) Materials of construction;
- (ii) Piping and instrument diagrams (P&ID's);
- (iii) Electrical classification;
- (iv) Relief system design and design basis;
- (v) Ventilation system design;

(vi) Design codes and standards employed;

(vii) Material and energy balances for processes built after June 21, 1999; and

(viii) Safety systems (e.g. interlocks, detection or suppression systems).

(2) The owner or operator shall document that equipment complies with recognized and generally accepted good engineering practices.

(3) For existing equipment designed and constructed in accordance with codes, standards, or practices that are no longer in general use, the owner or operator shall determine and document that the equipment is designed, maintained, inspected, tested, and operating in a safe manner.

#### §68.67 Process hazard analysis.

(a) The owner or operator shall perform an initial process hazard analysis (hazard evaluation) on processes covered by this part. The process hazard analysis shall be appropriate to the complexity of the process and shall identify, evaluate, and control the hazards involved in the process. The owner or operator shall determine and document the priority order for conducting process hazard analyses based on a rationale which includes such considerations as extent of the process hazards, number of potentially affected employees, age of the process, and operating history of the process. The process hazard analysis shall be conducted as soon as possible, but not later than June 21, 1999. Process hazards analyses completed to comply with 29 CFR 1910.119(e) are acceptable as initial process hazards analyses. These process hazard analyses shall be updated and revalidated, based on their completion date.

(b) The owner or operator shall use one or more of the following methodologies that are appropriate to determine and evaluate the hazards of the process being analyzed.

- (1) What-If;
- (2) Checklist;
- (3) What-If/Checklist;
- (4) Hazard and Operability Study (HAZOP);
- (5) Failure Mode and Effects Analysis (FMEA);
- (6) Fault Tree Analysis; or

(7) An appropriate equivalent methodology.

(c) The process hazard analysis shall address:

(1) The hazards of the process;

(2) The identification of any previous incident which had a likely potential for catastrophic consequences.

(3) Engineering and administrative controls applicable to the hazards and their interrelationships such as appropriate application of detection methodologies to provide early warning of releases. (Acceptable detection methods might include process monitoring and control instrumentation with alarms, and detection hardware such as hydrocarbon sensors.);

(4) Consequences of failure of engineering and administrative controls;

(5) Stationary source siting;

(6) Human factors; and

(7) A qualitative evaluation of a range of the possible safety and health effects of failure of controls.

(d) The process hazard analysis shall be performed by a team with expertise in engineering and process operations, and the team shall include at least one employee who has experience and knowledge specific to the process being evaluated. Also, one member of the team must be knowledgeable in the specific process hazard analysis methodology being used.

(e) The owner or operator shall establish a system to promptly address the team's findings and recommendations; assure that the recommendations are resolved in a timely manner and that the resolution is documented; document what actions are to be taken; complete actions as soon as possible; develop a written schedule of when these actions are to be completed; communicate the actions to operating, maintenance and other employees whose work assignments are in the process and who may be affected by the recommendations or actions.

(f) At least every five (5) years after the completion of the initial process hazard analysis, the process hazard analysis shall be updated and revalidated by a team meeting the requirements in paragraph (d) of this section, to assure that the process hazard analysis is consistent with the current process. Updated and revalidated proc-

ess hazard analyses completed to comply with 29 CFR 1910.119(e) are acceptable to meet the requirements of this paragraph.

(g) The owner or operator shall retain process hazards analyses and updates or revalidations for each process covered by this section, as well as the documented resolution of recommendations described in paragraph (e) of this section for the life of the process.

#### § 68.69 Operating procedures.

(a) The owner or operator shall develop and implement written operating procedures that provide clear instructions for safely conducting activities involved in each covered process consistent with the process safety information and shall address at least the following elements.

(1) Steps for each operating phase:

(i) Initial startup;

(ii) Normal operations;

(iii) Temporary operations;

(iv) Emergency shutdown including the conditions under which emergency shutdown is required, and the assignment of shutdown responsibility to qualified operators to ensure that emergency shutdown is executed in a safe and timely manner.

(v) Emergency operations;

(vi) Normal shutdown; and,

(vii) Startup following a turnaround, or after an emergency shutdown.

(2) Operating limits:

(i) Consequences of deviation; and

(ii) Steps required to correct or avoid deviation.

(3) Safety and health considerations:

(i) Properties of, and hazards presented by, the chemicals used in the process;

(ii) Precautions necessary to prevent exposure, including engineering controls, administrative controls, and personal protective equipment;

(iii) Control measures to be taken if physical contact or airborne exposure occurs;

(iv) Quality control for raw materials and control of hazardous chemical inventory levels; and,

(v) Any special or unique hazards.

(4) Safety systems and their functions.

(b) Operating procedures shall be readily accessible to employees who work in or maintain a process.

(c) The operating procedures shall be reviewed as often as necessary to assure that they reflect current operating practice, including changes that result from changes in process chemicals, technology, and equipment, and changes to stationary sources. The owner or operator shall certify annually that these operating procedures are current and accurate.

(d) The owner or operator shall develop and implement safe work practices to provide for the control of hazards during operations such as lockout/tagout; confined space entry; opening process equipment or piping; and control over entrance into a stationary source by maintenance, contractor, laboratory, or other support personnel. These safe work practices shall apply to employees and contractor employees.

#### § 68.71 Training.

(a) *Initial training.* (1) Each employee presently involved in operating a process, and each employee before being involved in operating a newly assigned process, shall be trained in an overview of the process and in the operating procedures as specified in § 68.69. The training shall include emphasis on the specific safety and health hazards, emergency operations including shutdown, and safe work practices applicable to the employee's job tasks.

(2) In lieu of initial training for those employees already involved in operating a process on June 21, 1999 an owner or operator may certify in writing that the employee has the required knowledge, skills, and abilities to safely carry out the duties and responsibilities as specified in the operating procedures.

(b) *Refresher training.* Refresher training shall be provided at least every three years, and more often if necessary, to each employee involved in operating a process to assure that the employee understands and adheres to the current operating procedures of the process. The owner or operator, in consultation with the employees involved in operating the process, shall deter-

mine the appropriate frequency of refresher training.

(c) *Training documentation.* The owner or operator shall ascertain that each employee involved in operating a process has received and understood the training required by this paragraph. The owner or operator shall prepare a record which contains the identity of the employee, the date of training, and the means used to verify that the employee understood the training.

#### § 68.73 Mechanical integrity.

(a) *Application.* Paragraphs (b) through (f) of this section apply to the following process equipment:

(1) Pressure vessels and storage tanks;

(2) Piping systems (including piping components such as valves);

(3) Relief and vent systems and devices;

(4) Emergency shutdown systems;

(5) Controls (including monitoring devices and sensors, alarms, and interlocks) and,

(6) Pumps.

(b) *Written procedures.* The owner or operator shall establish and implement written procedures to maintain the on-going integrity of process equipment.

(c) *Training for process maintenance activities.* The owner or operator shall train each employee involved in maintaining the on-going integrity of process equipment in an overview of that process and its hazards and in the procedures applicable to the employee's job tasks to assure that the employee can perform the job tasks in a safe manner.

(d) *Inspection and testing.* (1) Inspections and tests shall be performed on process equipment.

(2) Inspection and testing procedures shall follow recognized and generally accepted good engineering practices.

(3) The frequency of inspections and tests of process equipment shall be consistent with applicable manufacturers' recommendations and good engineering practices, and more frequently if determined to be necessary by prior operating experience.

(4) The owner or operator shall document each inspection and test that has been performed on process equipment. The documentation shall identify the

date of the inspection or test, the name of the person who performed the inspection or test, the serial number or other identifier of the equipment on which the inspection or test was performed, a description of the inspection or test performed, and the results of the inspection or test.

(e) *Equipment deficiencies.* The owner or operator shall correct deficiencies in equipment that are outside acceptable limits (defined by the process safety information in §68.65) before further use or in a safe and timely manner when necessary means are taken to assure safe operation.

(f) *Quality assurance.* (1) In the construction of new plants and equipment, the owner or operator shall assure that equipment as it is fabricated is suitable for the process application for which they will be used.

(2) Appropriate checks and inspections shall be performed to assure that equipment is installed properly and consistent with design specifications and the manufacturer's instructions.

(3) The owner or operator shall assure that maintenance materials, spare parts and equipment are suitable for the process application for which they will be used.

#### § 68.75 Management of change.

(a) The owner or operator shall establish and implement written procedures to manage changes (except for "replacements in kind") to process chemicals, technology, equipment, and procedures; and, changes to stationary sources that affect a covered process.

(b) The procedures shall assure that the following considerations are addressed prior to any change:

(1) The technical basis for the proposed change;

(2) Impact of change on safety and health;

(3) Modifications to operating procedures;

(4) Necessary time period for the change; and,

(5) Authorization requirements for the proposed change.

(c) Employees involved in operating a process and maintenance and contract employees whose job tasks will be affected by a change in the process shall be informed of, and trained in, the

change prior to start-up of the process or affected part of the process.

(d) If a change covered by this paragraph results in a change in the process safety information required by §68.65 of this part, such information shall be updated accordingly.

(e) If a change covered by this paragraph results in a change in the operating procedures or practices required by §68.69, such procedures or practices shall be updated accordingly.

#### § 68.77 Pre-startup review.

(a) The owner or operator shall perform a pre-startup safety review for new stationary sources and for modified stationary sources when the modification is significant enough to require a change in the process safety information.

(b) The pre-startup safety review shall confirm that prior to the introduction of regulated substances to a process:

(1) Construction and equipment is in accordance with design specifications;

(2) Safety, operating, maintenance, and emergency procedures are in place and are adequate;

(3) For new stationary sources, a process hazard analysis has been performed and recommendations have been resolved or implemented before startup; and modified stationary sources meet the requirements contained in management of change, §68.75.

(4) Training of each employee involved in operating a process has been completed.

#### § 68.79 Compliance audits.

(a) The owner or operator shall certify that they have evaluated compliance with the provisions of this section at least every three years to verify that the procedures and practices developed under the standard are adequate and are being followed.

(b) The compliance audit shall be conducted by at least one person knowledgeable in the process.

(c) A report of the findings of the audit shall be developed.

(d) The owner or operator shall promptly determine and document an appropriate response to each of the findings of the compliance audit, and

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document that deficiencies have been corrected.

(e) The owner or operator shall retain the two (2) most recent compliance audit reports.

### **§ 68.81 Incident investigation.**

(a) The owner or operator shall investigate each incident which resulted in, or could reasonably have resulted in a catastrophic release of a regulated substance.

(b) An incident investigation shall be initiated as promptly as possible, but not later than 48 hours following the incident.

(c) An incident investigation team shall be established and consist of at least one person knowledgeable in the process involved, including a contract employee if the incident involved work of the contractor, and other persons with appropriate knowledge and experience to thoroughly investigate and analyze the incident.

(d) A report shall be prepared at the conclusion of the investigation which includes at a minimum:

- (1) Date of incident;
- (2) Date investigation began;
- (3) A description of the incident;
- (4) The factors that contributed to the incident; and,
- (5) Any recommendations resulting from the investigation.

(e) The owner or operator shall establish a system to promptly address and resolve the incident report findings and recommendations. Resolutions and corrective actions shall be documented.

(f) The report shall be reviewed with all affected personnel whose job tasks are relevant to the incident findings including contract employees where applicable.

(g) Incident investigation reports shall be retained for five years.

### **§ 68.83 Employee participation.**

(a) The owner or operator shall develop a written plan of action regarding the implementation of the employee participation required by this section.

(b) The owner or operator shall consult with employees and their representatives on the conduct and development of process hazards analyses and on the development of the other ele-

ments of process safety management in this rule.

(c) The owner or operator shall provide to employees and their representatives access to process hazard analyses and to all other information required to be developed under this rule.

### **§ 68.85 Hot work permit.**

(a) The owner or operator shall issue a hot work permit for hot work operations conducted on or near a covered process.

(b) The permit shall document that the fire prevention and protection requirements in 29 CFR 1910.252(a) have been implemented prior to beginning the hot work operations; it shall indicate the date(s) authorized for hot work; and identify the object on which hot work is to be performed. The permit shall be kept on file until completion of the hot work operations.

### **§ 68.87 Contractors.**

(a) *Application.* This section applies to contractors performing maintenance or repair, turnaround, major renovation, or specialty work on or adjacent to a covered process. It does not apply to contractors providing incidental services which do not influence process safety, such as janitorial work, food and drink services, laundry, delivery or other supply services.

(b) *Owner or operator responsibilities.*

(1) The owner or operator, when selecting a contractor, shall obtain and evaluate information regarding the contract owner or operator's safety performance and programs.

(2) The owner or operator shall inform contract owner or operator of the known potential fire, explosion, or toxic release hazards related to the contractor's work and the process.

(3) The owner or operator shall explain to the contract owner or operator the applicable provisions of subpart E of this part.

(4) The owner or operator shall develop and implement safe work practices consistent with § 68.69(d), to control the entrance, presence, and exit of the contract owner or operator and contract employees in covered process areas.

(5) The owner or operator shall periodically evaluate the performance of

the contract owner or operator in fulfilling their obligations as specified in paragraph (c) of this section.

(c) *Contract owner or operator responsibilities.* (1) The contract owner or operator shall assure that each contract employee is trained in the work practices necessary to safely perform his/her job.

(2) The contract owner or operator shall assure that each contract employee is instructed in the known potential fire, explosion, or toxic release hazards related to his/her job and the process, and the applicable provisions of the emergency action plan.

(3) The contract owner or operator shall document that each contract employee has received and understood the training required by this section. The contract owner or operator shall prepare a record which contains the identity of the contract employee, the date of training, and the means used to verify that the employee understood the training.

(4) The contract owner or operator shall assure that each contract employee follows the safety rules of the stationary source including the safe work practices required by § 68.69(d).

(5) The contract owner or operator shall advise the owner or operator of any unique hazards presented by the contract owner or operator's work, or of any hazards found by the contract owner or operator's work.

### Subpart E—Emergency Response

SOURCE: 61 FR 31725, June 20, 1996, unless otherwise noted.

EFFECTIVE DATE NOTE: At 61 FR 31725, June 20, 1996, subpart E was added, effective Aug. 19, 1996.

#### § 68.90 Applicability.

(a) Except as provided in paragraph (b) of this section, the owner or operator of a stationary source with Program 2 and Program 3 processes shall comply with the requirements of § 68.95.

(b) The owner or operator of stationary source whose employees will not respond to accidental releases of regulated substances need not comply with § 68.95 of this part provided that they meet the following:

(1) For stationary sources with any regulated toxic substance held in a process above the threshold quantity, the stationary source is included in the community emergency response plan developed under 42 U.S.C. 11003;

(2) For stationary sources with only regulated flammable substances held in a process above the threshold quantity, the owner or operator has coordinated response actions with the local fire department; and

(3) Appropriate mechanisms are in place to notify emergency responders when there is a need for a response.

#### § 68.95 Emergency response program.

(a) The owner or operator shall develop and implement an emergency response program for the purpose of protecting public health and the environment. Such program shall include the following elements:

(1) An emergency response plan, which shall be maintained at the stationary source and contain at least the following elements:

(i) Procedures for informing the public and local emergency response agencies about accidental releases;

(ii) Documentation of proper first-aid and emergency medical treatment necessary to treat accidental human exposures; and

(iii) Procedures and measures for emergency response after an accidental release of a regulated substance;

(2) Procedures for the use of emergency response equipment and for its inspection, testing, and maintenance;

(3) Training for all employees in relevant procedures; and

(4) Procedures to review and update, as appropriate, the emergency response plan to reflect changes at the stationary source and ensure that employees are informed of changes.

(b) A written plan that complies with other Federal contingency plan regulations or is consistent with the approach in the National Response Team's Integrated Contingency Plan Guidance ("One Plan") and that, among other matters, includes the elements provided in paragraph (a) of this section, shall satisfy the requirements of this section if the owner or operator also complies with paragraph (c) of this section.

(c) The emergency response plan developed under paragraph (a)(1) of this section shall be coordinated with the community emergency response plan developed under 42 U.S.C. 11003. Upon request of the local emergency planning committee or emergency response officials, the owner or operator shall promptly provide to the local emergency response officials information necessary for developing and implementing the community emergency response plan.

### Subpart F—Regulated Substances for Accidental Release Prevention

SOURCE: 59 FR 4493, Jan. 31, 1994, unless otherwise noted. Redesignated at 61 FR 31717, June 20, 1996.

EFFECTIVE DATE NOTE: At 61 FR 31717, June 20, 1996, subpart C was redesignated as subpart F, effective Aug. 19, 1996.

#### § 68.100 Purpose.

This subpart designates substances to be listed under section 112(r)(3), (4), and (5) of the Clean Air Act, as amended, identifies their threshold quantities, and establishes the requirements for petitioning to add or delete substances from the list.

#### § 68.115 Threshold determination.

(a) A threshold quantity of a regulated substance listed in § 68.130 is present at a stationary source if the total quantity of the regulated substance contained in a process exceeds the threshold.

(b) For the purposes of determining whether more than a threshold quantity of a regulated substance is present at the stationary source, the following exemptions apply:

(1) *Concentrations of a regulated toxic substance in a mixture.* If a regulated substance is present in a mixture and the concentration of the substance is below one percent by weight of the mixture, the amount of the substance in the mixture need not be considered when determining whether more than a threshold quantity is present at the stationary source. Except for oleum, toluene 2,4-diisocyanate, toluene 2,6-diisocyanate, and toluene diisocyanate (unspecified isomer), if the concentra-

tion of the regulated substance in the mixture is one percent or greater by weight, but the owner or operator can demonstrate that the partial pressure of the regulated substance in the mixture (solution) under handling or storage conditions in any portion of the process is less than 10 millimeters of mercury (mm Hg), the amount of the substance in the mixture in that portion of the process need not be considered when determining whether more than a threshold quantity is present at the stationary source. The owner or operator shall document this partial pressure measurement or estimate.

(2) *Concentrations of a regulated flammable substance in a mixture.* If a regulated substance is present in a mixture and the concentration of the substance is below one percent by weight of the mixture, the mixture need not be considered when determining whether more than a threshold quantity of the regulated substance is present at the stationary source. If the concentration of the regulated substance in the mixture is one percent or greater by weight, then, for purposes of determining whether more than a threshold quantity is present at the stationary source, the entire weight of the mixture shall be treated as the regulated substance unless the owner or operator can demonstrate that the mixture itself does not meet the criteria for flammability of flash point below 73°F (22.8°C) and boiling point below 100°F (37.8°C). The owner or operator shall document these flash point and boiling point measurements or estimates.

(3) *Concentrations of a regulated explosive substance in a mixture.* Mixtures of Division 1.1 explosives listed in 49 CFR 172.101 (Hazardous Materials Table) and other explosives need not be included when determining whether a threshold quantity is present in a process, when the mixture is intended to be used on-site in a non-accidental release in a manner consistent with applicable BATF regulations. Other mixtures of Division 1.1 explosives listed in 49 CFR 172.101 and other explosives shall be included in determining whether more than a threshold quantity is present in a process if such mixtures would be treated as Division 1.1 explosives under 49 CFR parts 172 and 173.

(4) *Articles.* Regulated substances contained in articles need not be considered when determining whether more than a threshold quantity is present at the stationary source.

(5) *Uses.* Regulated substances, when in use for the following purposes, need not be included in determining whether more than a threshold quantity is present at the stationary source:

- (i) Use as a structural component of the stationary source;
- (ii) Use of products for routine janitorial maintenance;
- (iii) Use by employees of foods, drugs, cosmetics, or other personal items containing the regulated substance; and
- (iv) Use of regulated substances present in process water or non-contact cooling water as drawn from the environment or municipal sources, or use of regulated substances present in air used either as compressed air or as part of combustion.

(6) *Activities in laboratories.* If a regulated substance is manufactured, processed, or used in a laboratory at a stationary source under the supervision of a technically qualified individual as defined in §720.3(ee) of this chapter, the quantity of the substance need not be considered in determining whether a threshold quantity is present. This exemption does not apply to:

- (i) Specialty chemical production;
- (ii) Manufacture, processing, or use of substances in pilot plant scale operations; and
- (iii) Activities conducted outside the laboratory.

**§68.120 Petition process.**

(a) Any person may petition the Administrator to modify, by addition or deletion, the list of regulated substances identified in §68.130. Based on the information presented by the petitioner, the Administrator may grant or deny a petition.

(b) A substance may be added to the list if, in the case of an accidental release, it is known to cause or may be reasonably anticipated to cause death, injury, or serious adverse effects to human health or the environment.

(c) A substance may be deleted from the list if adequate data on the health and environmental effects of the substance are available to determine that

the substance, in the case of an accidental release, is not known to cause and may not be reasonably anticipated to cause death, injury, or serious adverse effects to human health or the environment.

(d) No substance for which a national primary ambient air quality standard has been established shall be added to the list. No substance regulated under title VI of the Clean Air Act, as amended, shall be added to the list.

(e) The burden of proof is on the petitioner to demonstrate that the criteria for addition and deletion are met. A petition will be denied if this demonstration is not made.

(f) The Administrator will not accept additional petitions on the same substance following publication of a final notice of the decision to grant or deny a petition, unless new data becomes available that could significantly affect the basis for the decision.

(g) Petitions to modify the list of regulated substances must contain the following:

- (1) Name and address of the petitioner and a brief description of the organization(s) that the petitioner represents, if applicable;
- (2) Name, address, and telephone number of a contact person for the petition;
- (3) Common chemical name(s), common synonym(s), Chemical Abstracts Service number, and chemical formula and structure;
- (4) Action requested (add or delete a substance);
- (5) Rationale supporting the petitioner's position; that is, how the substance meets the criteria for addition and deletion. A short summary of the rationale must be submitted along with a more detailed narrative; and
- (6) Supporting data; that is, the petition must include sufficient information to scientifically support the request to modify the list. Such information shall include:
  - (i) A list of all support documents;
  - (ii) Documentation of literature searches conducted, including, but not limited to, identification of the database(s) searched, the search strategy, dates covered, and printed results;
  - (iii) Effects data (animal, human, and environmental test data) indicating

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the potential for death, injury, or serious adverse human and environmental impacts from acute exposure following an accidental release; printed copies of the data sources, in English, should be provided; and

(iv) Exposure data or previous accident history data, indicating the potential for serious adverse human health or environmental effects from an accidental release. These data may include, but are not limited to, physical and chemical properties of the substance, such as vapor pressure; modeling results, including data and assumptions used and model documentation; and historical accident data, citing data sources.

(h) Within 18 months of receipt of a petition, the Administrator shall publish in the FEDERAL REGISTER a notice either denying the petition or granting the petition and proposing a listing.

§ 68.125 Exemptions.

*Agricultural nutrients.* Ammonia used as an agricultural nutrient, when held by farmers, is exempt from all provisions of this part.

§ 68.130 List of substances.

(a) Explosives listed by DOT as Division 1.1 in 49 CFR 172.101 are covered under section 112(r) of the Clean Air Act. The threshold quantity for explosives is 5,000 pounds.

(b) Regulated toxic and flammable substances under section 112(r) of the Clean Air Act are the substances listed in Tables 1, 2, 3, and 4. Threshold quantities for listed toxic and flammable substances are specified in the tables.

(c) The basis for placing toxic and flammable substances on the list of regulated substances are explained in the notes to the list.

TABLE 1 TO § 68.130.—LIST OF REGULATED TOXIC SUBSTANCES AND THRESHOLD QUANTITIES FOR ACCIDENTAL RELEASE PREVENTION—Continued

[Alphabetical Order—77 Substances]

| Chemical name  | CAS No.    | Threshold quantity (lbs) | Basis for listing |
|--|------------|--------------------------|-------------------|
| Acrylyl chloride [2-Propenoyl chloride].   | 814-68-6   | 5,000                    | b                 |
| Allyl alcohol [2-Propen-1-ol].   | 107-18-61  | 15,000                   | b                 |
| Allylamine [2-Propen-1-amine].   | 107-11-9   | 10,000                   | b                 |
| Ammonia (anhydrous).   | 7664-41-7  | 10,000                   | a, b              |
| Ammonia (conc 20% or greater).   | 7664-41-7  | 20,000                   | a, b              |
| Arsenous trichloride.  | 7784-34-1  | 15,000                   | b                 |
| Arsine .....   | 7784-42-1  | 1,000                    | b                 |
| Boron trichloride [Borane, trichloro-].  | 10294-34-5 | 5,000                    | b                 |
| Boron trifluoride [Borane, trifluoro-].  | 7637-07-2  | 5,000                    | b                 |
| Boron trifluoride compound with methyl ether (1:1) [Boron, trifluoro [oxybis [metane]]-, T-4-. | 353-42-4   | 15,000                   | b                 |
| Bromine .....  | 7726-95-6  | 10,000                   | a, b              |
| Carbon disulfide   | 75-15-0    | 20,000                   | b                 |
| Chlorine .....   | 7782-50-5  | 2,500                    | a, b              |
| Chlorine dioxide [Chlorine oxide (ClO2)].  | 10049-04-4 | 1,000                    | c                 |
| Chloroform [Methane, trichloro-].  | 67-66-3    | 20,000                   | b                 |
| Chloromethyl ether [Methane, oxybis[chloro-].  | 542-88-1   | 1,000                    | b                 |
| Chloromethyl methyl ether [Methane, chloromethoxy-].   | 107-30-2   | 5,000                    | b                 |
| Crotonaldehyde [2-Butenal].  | 4170-30-3  | 20,000                   | b                 |
| Crotonaldehyde, (E)- [2-Butenal, (E)-].  | 123-73-9   | 20,000                   | b                 |
| Cyanogen chloride.   | 506-77-4   | 10,000                   | c                 |
| Cyclohexylamine [Cyclohexanamine].   | 108-91-8   | 15,000                   | b                 |
| Diborane .....   | 19287-45-7 | 2,500                    | b                 |
| Dimethyldichlorosilane [Silane, dichlorodimethyl-].  | 75-78-5    | 5,000                    | b                 |
| 1,1-Dimethylhydrazine [Hydrazine, 1,1-dimethyl-].  | 57-14-7    | 15,000                   | b                 |
| Epichlorohydrin [Oxirane, (chloromethyl)-].  | 106-89-8   | 20,000                   | b                 |

TABLE 1 TO § 68.130.—LIST OF REGULATED TOXIC SUBSTANCES AND THRESHOLD QUANTITIES FOR ACCIDENTAL RELEASE PREVENTION [Alphabetical Order—77 Substances]

| Chemical name                     | CAS No.  | Threshold quantity (lbs) | Basis for listing |
|-----------------------------------|----------|--------------------------|-------------------|
| Acrolein [2-Propenal].            | 107-02-8 | 5,000                    | b                 |
| Acrylonitrile [2-Propenenitrile]. | 107-13-1 | 20,000                   | b                 |

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TABLE 1 TO § 68.130.—LIST OF REGULATED TOXIC SUBSTANCES AND THRESHOLD QUANTITIES FOR ACCIDENTAL RELEASE PREVENTION—Continued

[Alphabetical Order—77 Substances]

| Chemical name   | CAS No.    | Threshold quantity (lbs) | Basis for listing |
|---|------------|--------------------------|-------------------|
| Ethylenediamine [1,2-Ethanediamine].  | 107-15-3   | 20,000                   | b                 |
| Ethyleneimine [Aziridine].  | 151-56-4   | 10,000                   | b                 |
| Ethylene oxide [Oxirane].   | 75-21-8    | 10,000                   | a, b              |
| Fluorine .....  | 7782-41-4  | 1,000                    | b                 |
| Formaldehyde (solution).  | 50-00-0    | 15,000                   | b                 |
| Furan .....   | 110-00-9   | 5,000                    | b                 |
| Hydrazine .....   | 302-01-2   | 15,000                   | b                 |
| Hydrochloric acid (conc 30% or greater).  | 7647-01-0  | 15,000                   | d                 |
| Hydrocyanic acid  | 74-90-8    | 2,500                    | a, b              |
| Hydrogen chloride (anhydrous) [Hydrochloric acid].                              | 7647-01-0  | 5,000                    | a                 |
| Hydrogen fluoride/ Hydrofluoric acid (conc 50% or greater) [Hydrofluoric acid]. | 7664-39-3  | 1,000                    | a, b              |
| Hydrogen selenide.  | 7783-07-5  | 500                      | b                 |
| Hydrogen sulfide  | 7783-06-4  | 10,000                   | a, b              |
| Iron, pentacarbonyl- [Iron carbonyl (Fe(CO) <sub>5</sub> ), (TB-5-11)-].        | 13463-40-6 | 2,500                    | b                 |
| Isobutyronitrile [Propanenitrile, 2-methyl-].                                   | 78-82-0    | 20,000                   | b                 |
| Isopropyl chloroformate [Carbonochloridic acid, 1-methylethyl ester].           | 108-23-6   | 15,000                   | b                 |
| Methacrylonitrile [2-Propenenitrile, 2-methyl-].                                | 126-98-7   | 10,000                   | b                 |
| Methyl chloride [Methane, chloro-].   | 74-87-3    | 10,000                   | a                 |
| Methyl chloroformate [Carbonochloridic acid, methylester].                      | 79-22-1    | 5,000                    | b                 |
| Methyl hydrazine [Hydrazine, methyl-].  | 60-34-4    | 15,000                   | b                 |
| Methyl isocyanate [Methane, isocyanato-].                                       | 624-83-9   | 10,000                   | a, b              |
| Methyl mercaptan [Methanethiol].  | 74-93-1    | 10,000                   | b                 |

TABLE 1 TO § 68.130.—LIST OF REGULATED TOXIC SUBSTANCES AND THRESHOLD QUANTITIES FOR ACCIDENTAL RELEASE PREVENTION—Continued

[Alphabetical Order—77 Substances]

| Chemical name   | CAS No.    | Threshold quantity (lbs) | Basis for listing |
|---|------------|--------------------------|-------------------|
| Methyl thiocyanate [Thiocyanic acid, methyl ester].                                       | 556-64-9   | 20,000                   | b                 |
| Methyltrichlorosilane [Silane, trichloromethyl-].   | 75-79-6    | 5,000                    | b                 |
| Nickel carbonyl ...   | 13463-39-3 | 1,000                    | b                 |
| Nitric acid (conc 80% or greater).  | 7697-37-2  | 15,000                   | b                 |
| Nitric oxide [Nitrogen oxide (NO)].   | 10102-43-9 | 10,000                   | b                 |
| Oleum (Fuming Sulfuric acid) [Sulfuric acid, mixture with sulfur trioxide] <sup>1</sup> . | 8014-95-7  | 10,000                   | e                 |
| Peracetic acid [Ethaneperoxyic acid].   | 79-21-0    | 10,000                   | b                 |
| Perchloromethylmercaptan [Methanesulfenyl chloride, trichloro-].                          | 594-42-3   | 10,000                   | b                 |
| Phosgene [Carbonic dichloride].   | 75-44-5    | 500                      | a, b              |
| Phosphine .....   | 7803-51-2  | 5,000                    | b                 |
| Phosphorus oxychloride [Phosphoryl chloride].   | 10025-87-3 | 5,000                    | b                 |
| Phosphorus trichloride [Phosphorous trichloride].   | 7719-12-2  | 15,000                   | b                 |
| Piperidine .....  | 110-89-4   | 15,000                   | b                 |
| Propionitrile [Propanenitrile].   | 107-12-0   | 10,000                   | b                 |
| Propyl chloroformate [Carbonochloridic acid, propylester].                                | 109-61-5   | 15,000                   | b                 |
| Propyleneimine [Aziridine, 2-methyl-].  | 75-55-8    | 10,000                   | b                 |
| Propylene oxide [Oxirane, methyl-].   | 75-56-9    | 10,000                   | b                 |
| Sulfur dioxide (anhydrous).   | 7446-09-5  | 5,000                    | a, b              |
| Sulfur tetrafluoride [Sulfur fluoride (SF <sub>4</sub> ), (T-4)-].                        | 7783-60-0  | 2,500                    | b                 |
| Sulfur trioxide .....   | 7446-11-9  | 10,000                   | a, b              |
| Tetramethyllead [Plumbane, tetramethyl-].   | 75-74-1    | 10,000                   | b                 |
| Tetranitromethane [Methane, tetranitro-].   | 509-14-8   | 10,000                   | b                 |

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TABLE 1 TO § 68.130.—LIST OF REGULATED TOXIC SUBSTANCES AND THRESHOLD QUANTITIES FOR ACCIDENTAL RELEASE PREVENTION—Continued

[Alphabetical Order—77 Substances]

| Chemical name   | CAS No.    | Threshold quantity (lbs) | Basis for listing |
|---|------------|--------------------------|-------------------|
| Titanium tetrachloride [Titanium chloride (TiCl <sub>4</sub> ) (T-4)].                      | 7550-45-0  | 2,500                    | b                 |
| Toluene 2,4-diisocyanate [Benzene, 2,4-diisocyanato-1-methyl-] <sup>1</sup> .               | 584-84-9   | 10,000                   | a                 |
| Toluene 2,6-diisocyanate [Benzene, 1,3-diisocyanato-2-methyl-] <sup>1</sup> .               | 91-08-7    | 10,000                   | a                 |
| Toluene diisocyanate (unspecified isomer) [Benzene, 1,3-diisocyanatomethyl-] <sup>1</sup> . | 26471-62-5 | 10,000                   | a                 |

TABLE 1 TO § 68.130.—LIST OF REGULATED TOXIC SUBSTANCES AND THRESHOLD QUANTITIES FOR ACCIDENTAL RELEASE PREVENTION—Continued

[Alphabetical Order—77 Substances]

| Chemical name                                      | CAS No.  | Threshold quantity (lbs) | Basis for listing |
|--|----------|--------------------------|-------------------|
| Trimethylchlorosilane [Silane, chlorotrimethyl-].  | 75-77-4  | 10,000                   | b                 |
| Vinyl acetate monomer [Acetic acid ethenyl ester]. | 108-05-4 | 15,000                   | b                 |

<sup>1</sup> The mixture exemption in § 68.115(b)(1) does not apply to the substance.

NOTE: Basis for Listing:

- a Mandated for listing by Congress.
- b On EHS list, vapor pressure 10 mmHg or greater.
- c Toxic gas.
- d Toxicity of hydrogen chloride, potential to release hydrogen chloride, and history of accidents.
- e Toxicity of sulfur trioxide and sulfuric acid, potential to release sulfur trioxide, and history of accidents.

TABLE 2 TO § 68.130.—LIST OF REGULATED TOXIC SUBSTANCES AND THRESHOLD QUANTITIES FOR ACCIDENTAL RELEASE PREVENTION

[CAS Number Order—77 Substances]

| CAS No.  | Chemical name   | Threshold quantity (lbs) | Basis for listing |
|----------|---|--------------------------|-------------------|
| 50-00-0  | Formaldehyde (solution)   | 15,000                   | b                 |
| 57-14-7  | 1,1-Dimethylhydrazine [Hydrazine, 1,1-dimethyl-]                            | 15,000                   | b                 |
| 60-34-4  | Methyl hydrazine [Hydrazine, methyl-]                                       | 15,000                   | b                 |
| 67-66-3  | Chloroform [Methane, trichloro-]  | 20,000                   | b                 |
| 74-87-3  | Methyl chloride [Methane, chloro-]  | 10,000                   | a                 |
| 74-90-8  | Hydrocyanic acid  | 2,500                    | a, b              |
| 74-93-1  | Methyl mercaptan [Methanethiol]   | 10,000                   | b                 |
| 75-15-0  | Carbon disulfide  | 20,000                   | b                 |
| 75-21-8  | Ethylene oxide [Oxirane]  | 10,000                   | a, b              |
| 75-44-5  | Phosgene [Carbonic dichloride]  | 500                      | a, b              |
| 75-55-8  | Propyleneimine [Aziridine, 2-methyl-]                                       | 10,000                   | b                 |
| 75-56-9  | Propylene oxide [Oxirane, methyl-]  | 10,000                   | b                 |
| 75-74-1  | Tetramethyllead [Plumbane, tetramethyl-]                                    | 10,000                   | b                 |
| 75-77-4  | Trimethylchlorosilane [Silane, chlorotrimethyl-]                            | 10,000                   | b                 |
| 75-78-5  | Dimethyldichlorosilane [Silane, dichlorodimethyl-]                          | 5,000                    | b                 |
| 75-79-6  | Methyltrichlorosilane [Silane, trichloromethyl-]                            | 5,000                    | b                 |
| 78-82-0  | Isobutyronitrile [Propanenitrile, 2-methyl-]                                | 20,000                   | b                 |
| 79-21-0  | Peracetic acid [Ethaneperoxoic acid]  | 10,000                   | b                 |
| 79-22-1  | Methyl chloroformate [Carbonochloridic acid, methylester]                   | 5,000                    | b                 |
| 91-08-7  | Toluene 2,6-diisocyanate [Benzene, 1,3-diisocyanato-2-methyl-] <sup>1</sup> | 10,000                   | a                 |
| 106-89-8 | Epichlorohydrin [Oxirane, (chloromethyl)-]                                  | 20,000                   | b                 |
| 107-02-8 | Acrolein [2-Propenal]   | 5,000                    | b                 |
| 107-11-9 | Allylamine [2-Propen-1-amine]   | 10,000                   | b                 |
| 107-12-0 | Propionitrile [Propanenitrile]  | 10,000                   | b                 |
| 107-13-1 | Acrylonitrile [2-Propenenitrile]  | 20,000                   | b                 |
| 107-15-3 | Ethylenediamine [1,2-Ethanediamine]   | 20,000                   | b                 |
| 107-18-6 | Allyl alcohol [2-Propen-1-ol]   | 15,000                   | b                 |
| 107-30-2 | Chloromethyl methyl ether [Methane, chloromethoxy-]                         | 5,000                    | b                 |
| 108-05-4 | Vinyl acetate monomer [Acetic acid ethenyl ester]                           | 15,000                   | b                 |
| 108-23-6 | Isopropyl chloroformate [Carbonochloridic acid, 1-methylethyl ester]        | 15,000                   | b                 |
| 108-91-8 | Cyclohexylamine [Cyclohexanamine]   | 15,000                   | b                 |
| 109-61-5 | Propyl chloroformate [Carbonochloridic acid, propylester]                   | 15,000                   | b                 |
| 110-00-9 | Furan   | 5,000                    | b                 |
| 110-89-4 | Piperidine  | 15,000                   | b                 |
| 123-73-9 | Crotonaldehyde, (E)- [2-Butenal, (E)-]                                      | 20,000                   | b                 |

TABLE 2 TO § 68.130.—LIST OF REGULATED TOXIC SUBSTANCES AND THRESHOLD QUANTITIES FOR ACCIDENTAL RELEASE PREVENTION—Continued  
[CAS Number Order—77 Substances]

| CAS No.    | Chemical name  | Threshold quantity (lbs) | Basis for listing |
|------------|--|--------------------------|-------------------|
| 126-98-7   | Methacrylonitrile [2-Propenenitrile, 2-methyl-]  | 10,000                   | b                 |
| 151-56-4   | Ethyleneimine [Aziridine]  | 10,000                   | b                 |
| 302-01-2   | Hydrazine  | 15,000                   | b                 |
| 353-42-4   | Boron trifluoride compound with methyl ether (1:1) [Boron, trifluoro[oxybis[methane]]-, T-4- | 15,000                   | b                 |
| 506-77-4   | Cyanogen chloride  | 10,000                   | c                 |
| 509-14-8   | Tetranitromethane [Methane, tetranitro-]   | 10,000                   | b                 |
| 542-88-1   | Chloromethyl ether [Methane, oxybis[chloro-]   | 1,000                    | b                 |
| 556-64-9   | Methyl thiocyanate [Thiocyanic acid, methyl ester]   | 20,000                   | b                 |
| 584-84-9   | Toluene 2,4-diisocyanate [Benzene, 2,4-diisocyanato-1-methyl-] <sup>1</sup>                  | 10,000                   | a                 |
| 594-42-3   | Perchloromethylmercaptan [Methanesulfonyl chloride, trichloro-]                              | 10,000                   | b                 |
| 624-83-9   | Methyl isocyanate [Methane, isocyanato-]   | 10,000                   | a, b              |
| 814-68-6   | Acrylyl chloride [2-Propenoyl chloride]  | 5,000                    | b                 |
| 4170-30-3  | Crotonaldehyde [2-Butenal]   | 20,000                   | b                 |
| 7446-09-5  | Sulfur dioxide (anhydrous)   | 5,000                    | a, b              |
| 7446-11-9  | Sulfur trioxide  | 10,000                   | a, b              |
| 7550-45-0  | Titanium tetrachloride [Titanium chloride (TiCl <sub>4</sub> ) (T-4)-]                       | 2,500                    | b                 |
| 7637-07-2  | Boron trifluoride [Borane, trifluoro-]   | 5,000                    | b                 |
| 7647-01-0  | Hydrochloric acid (conc 30% or greater)  | 15,000                   | d                 |
| 7647-01-0  | Hydrogen chloride (anhydrous) [Hydrochloric acid]  | 5,000                    | a                 |
| 7664-39-3  | Hydrogen fluoride/Hydrofluoric acid (conc 50% or greater) [Hydrofluoric acid]                | 1,000                    | a, b              |
| 7664-41-7  | Ammonia (anhydrous)  | 10,000                   | a, b              |
| 7664-41-7  | Ammonia (conc 20% or greater)  | 20,000                   | a, b              |
| 7697-37-2  | Nitric acid (conc 80% or greater)  | 15,000                   | b                 |
| 7719-12-2  | Phosphorus trichloride [Phosphorous trichloride]   | 15,000                   | b                 |
| 7726-95-6  | Bromine  | 10,000                   | a, b              |
| 7782-41-4  | Fluorine   | 1,000                    | b                 |
| 7782-50-5  | Chlorine   | 2,500                    | a, b              |
| 7783-06-4  | Hydrogen sulfide   | 10,000                   | a, b              |
| 7783-07-5  | Hydrogen selenide  | 500                      | b                 |
| 7783-60-0  | Sulfur tetrafluoride [Sulfur fluoride (SF <sub>4</sub> ), (T-4)-]                            | 2,500                    | b                 |
| 7784-34-1  | Arsenous trichloride   | 15,000                   | b                 |
| 7784-42-1  | Arsine   | 1,000                    | b                 |
| 7803-51-2  | Phosphine  | 5,000                    | b                 |
| 8014-95-7  | Oleum (Fuming Sulfuric acid) [Sulfuric acid, mixture with sulfur trioxide] <sup>1</sup>      | 10,000                   | e                 |
| 10025-87-3 | Phosphorus oxychloride [Phosphoryl chloride]   | 5,000                    | b                 |
| 10049-04-4 | Chlorine dioxide [Chlorine oxide (ClO <sub>2</sub> )]  | 1,000                    | c                 |
| 10102-43-9 | Nitric oxide [Nitrogen oxide (NO)]   | 10,000                   | b                 |
| 10294-34-5 | Boron trichloride [Borane, trichloro-]   | 5,000                    | b                 |
| 13463-39-3 | Nickel carbonyl  | 1,000                    | b                 |
| 13463-40-6 | Iron, pentacarbonyl- [Iron carbonyl (Fe(CO) <sub>5</sub> ), (TB-5-11)-]                      | 2,500                    | b                 |
| 19287-45-7 | Diborane   | 2,500                    | b                 |
| 26471-62-5 | Toluene diisocyanate (unspecified isomer) [Benzene, 1,3-diisocyanatomethyl-1] <sup>1</sup> . | 10,000                   | a                 |

<sup>1</sup> The mixture exemption in § 68.115(b)(1) does not apply to the substance.

NOTE: Basis for Listing:

a Mandated for listing by Congress.

b On EHS list, vapor pressure 10 mmHg or greater.

c Toxic gas.

e Toxicity of sulfur trioxide and sulfuric acid, potential to release sulfur trioxide, and history of accidents.

TABLE 3 TO § 68.130.—LIST OF REGULATED FLAMMABLE SUBSTANCES AND THRESHOLD QUANTITIES FOR ACCIDENTAL RELEASE PREVENTION  
[Alphabetical Order—63 Substances]

| Chemical name                                    | CAS No.    | Threshold quantity (lbs) | Basis for listing |
|--|------------|--------------------------|-------------------|
| Acetaldehyde                                     | 75-07-0    | 10,000                   | g                 |
| Acetylene [Ethyne]                               | 74-86-2    | 10,000                   | f                 |
| Bromotrifluoroethylene [Ethene, bromotrifluoro-] | 598-73-2   | 10,000                   | f                 |
| 1,3-Butadiene                                    | 106-99-0   | 10,000                   | f                 |
| Butane   | 106-97-8   | 10,000                   | f                 |
| 1-Butene   | 106-98-9   | 10,000                   | f                 |
| 2-Butene   | 107-01-7   | 10,000                   | f                 |
| Butene   | 25167-67-3 | 10,000                   | f                 |

TABLE 3 TO § 68.130.—LIST OF REGULATED FLAMMABLE SUBSTANCES AND THRESHOLD QUANTITIES FOR ACCIDENTAL RELEASE PREVENTION—Continued  
[Alphabetical Order—63 Substances]

| Chemical name                                      | CAS No.    | Threshold quantity (lbs) | Basis for listing |
|--|------------|--------------------------|-------------------|
| 2-Butene-cis                                       | 590-18-1   | 10,000                   | f                 |
| 2-Butene-trans [2-Butene, (E)]                     | 624-64-6   | 10,000                   | f                 |
| Carbon oxysulfide [Carbon oxide sulfide (COS)]     | 463-58-1   | 10,000                   | f                 |
| Chlorine monoxide [Chlorine oxide]                 | 7791-21-1  | 10,000                   | f                 |
| 2-Chloropropylene [1-Propene, 2-chloro-]           | 557-98-2   | 10,000                   | g                 |
| 1-Chloropropylene [1-Propene, 1-chloro-]           | 590-21-6   | 10,000                   | g                 |
| Cyanogen [Ethanedinitrile]                         | 460-19-5   | 10,000                   | f                 |
| Cyclopropane                                       | 75-19-4    | 10,000                   | f                 |
| Dichlorosilane [Silane, dichloro-]                 | 4109-96-0  | 10,000                   | f                 |
| Difluoroethane [Ethane, 1,1-difluoro-]             | 75-37-6    | 10,000                   | f                 |
| Dimethylamine [Methanamine, N-methyl-]             | 124-40-3   | 10,000                   | f                 |
| 2,2-Dimethylpropane [Propane, 2,2-dimethyl-]       | 463-82-1   | 10,000                   | f                 |
| Ethane   | 74-84-0    | 10,000                   | f                 |
| Ethyl acetylene [1-Butyne]                         | 107-00-6   | 10,000                   | f                 |
| Ethylamine [Ethanamine]                            | 75-04-7    | 10,000                   | f                 |
| Ethyl chloride [Ethane, chloro-]                   | 75-00-3    | 10,000                   | f                 |
| Ethylene [Ethene]                                  | 74-85-1    | 10,000                   | f                 |
| Ethyl ether [Ethane, 1,1'-oxybis-]                 | 60-29-7    | 10,000                   | g                 |
| Ethyl mercaptan [Ethanethiol]                      | 75-08-1    | 10,000                   | g                 |
| Ethyl nitrite [Nitrous acid, ethyl ester]          | 109-95-5   | 10,000                   | f                 |
| Hydrogen   | 1333-74-0  | 10,000                   | f                 |
| Isobutane [Propane, 2-methyl]                      | 75-28-5    | 10,000                   | f                 |
| Isopentane [Butane, 2-methyl-]                     | 78-78-4    | 10,000                   | g                 |
| Isoprene [1,3-Butadiene, 2-methyl-]                | 78-79-5    | 10,000                   | g                 |
| Isopropylamine [2-Propanamine]                     | 75-31-0    | 10,000                   | g                 |
| Isopropyl chloride [Propane, 2-chloro-]            | 75-29-6    | 10,000                   | g                 |
| Methane  | 74-82-8    | 10,000                   | f                 |
| Methylamine [Methanamine]                          | 74-89-5    | 10,000                   | f                 |
| 3-Methyl-1-butene                                  | 563-45-1   | 10,000                   | f                 |
| 2-Methyl-1-butene                                  | 563-46-2   | 10,000                   | g                 |
| Methyl ether [Methane, oxybis-]                    | 115-10-6   | 10,000                   | f                 |
| Methyl formate [Formic acid, methyl ester]         | 107-31-3   | 10,000                   | g                 |
| 2-Methylpropene [1-Propene, 2-methyl-]             | 115-11-7   | 10,000                   | f                 |
| 1,3-Pentadiene                                     | 504-60-9   | 10,000                   | f                 |
| Pentane  | 109-66-0   | 10,000                   | g                 |
| 1-Pentene  | 109-67-1   | 10,000                   | g                 |
| 2-Pentene, (E)-                                    | 646-04-8   | 10,000                   | g                 |
| 2-Pentene, (Z)-                                    | 627-20-3   | 10,000                   | g                 |
| Propadiene [1,2-Propadiene]                        | 463-49-0   | 10,000                   | f                 |
| Propane  | 74-98-6    | 10,000                   | f                 |
| Propylene [1-Propene]                              | 115-07-1   | 10,000                   | f                 |
| Propyne [1-Propyne]                                | 74-99-7    | 10,000                   | f                 |
| Silane   | 7803-62-5  | 10,000                   | f                 |
| Tetrafluoroethylene [Ethene, tetrafluoro-]         | 116-14-3   | 10,000                   | f                 |
| Tetramethylsilane [Silane, tetramethyl-]           | 75-76-3    | 10,000                   | g                 |
| Trichlorosilane [Silane, trichloro-]               | 10025-78-2 | 10,000                   | g                 |
| Trifluorochloroethylene [Ethene, chlorotrifluoro-] | 79-38-9    | 10,000                   | f                 |
| Trimethylamine [Methanamine, N,N-dimethyl-]        | 75-50-3    | 10,000                   | f                 |
| Vinyl acetylene [1-Buten-3-yne]                    | 689-97-4   | 10,000                   | f                 |
| Vinyl chloride [Ethene, chloro-]                   | 75-01-4    | 10,000                   | a, f              |
| Vinyl ethyl ether [Ethene, ethoxy-]                | 109-92-2   | 10,000                   | g                 |
| Vinyl fluoride [Ethene, fluoro-]                   | 75-02-5    | 10,000                   | f                 |
| Vinylidene chloride [Ethene, 1,1-dichloro-]        | 75-35-4    | 10,000                   | g                 |
| Vinylidene fluoride [Ethene, 1,1-difluoro-]        | 75-38-7    | 10,000                   | f                 |
| Vinyl methyl ether [Ethene, methoxy-]              | 107-25-5   | 10,000                   | f                 |

NOTE: Basis for Listing:  
a Mandated for listing by Congress.  
f Flammable gas.  
g Volatile flammable liquid.

TABLE 4 TO § 68.130.—LIST OF REGULATED FLAMMABLE SUBSTANCES AND THRESHOLD QUANTITIES FOR ACCIDENTAL RELEASE PREVENTION  
[CAS Number Order—63 Substances]

| CAS No.    | Chemical name                                      | CAS No.    | Threshold quantity (lbs) | Basis for listing |
|------------|--|------------|--------------------------|-------------------|
| 60–29–7    | Ethyl ether [Ethane, 1,1'-oxybis-]                 | 60–29–7    | 10,000                   | g                 |
| 74–82–8    | Methane  | 74–82–8    | 10,000                   | f                 |
| 74–84–0    | Ethane   | 74–84–0    | 10,000                   | f                 |
| 74–85–1    | Ethylene [Ethene]                                  | 74–85–1    | 10,000                   | f                 |
| 74–86–2    | Acetylene [Ethyne]                                 | 74–86–2    | 10,000                   | f                 |
| 74–89–5    | Methylamine [Methanamine]                          | 74–89–5    | 10,000                   | f                 |
| 74–98–6    | Propane  | 74–98–6    | 10,000                   | f                 |
| 74–99–7    | Propyne [1-Propyne]                                | 74–99–7    | 10,000                   | f                 |
| 75–00–3    | Ethyl chloride [Ethane, chloro-]                   | 75–00–3    | 10,000                   | f                 |
| 75–01–4    | Vinyl chloride [Ethene, chloro-]                   | 75–01–4    | 10,000                   | a, f              |
| 75–02–5    | Vinyl fluoride [Ethene, fluoro-]                   | 75–02–5    | 10,000                   | f                 |
| 75–04–7    | Ethylamine [Ethanamine]                            | 75–04–7    | 10,000                   | f                 |
| 75–07–0    | Acetaldehyde                                       | 75–07–0    | 10,000                   | g                 |
| 75–08–1    | Ethyl mercaptan [Ethanethiol]                      | 75–08–1    | 10,000                   | g                 |
| 75–19–4    | Cyclopropane                                       | 75–19–4    | 10,000                   | f                 |
| 75–28–5    | Isobutane [Propane, 2-methyl]                      | 75–28–5    | 10,000                   | f                 |
| 75–29–6    | Isopropyl chloride [Propane, 2-chloro-]            | 75–29–6    | 10,000                   | g                 |
| 75–31–0    | Isopropylamine [2-Propanamine]                     | 75–31–0    | 10,000                   | g                 |
| 75–35–4    | Vinylidene chloride [Ethene, 1,1-dichloro-]        | 75–35–4    | 10,000                   | g                 |
| 75–37–6    | Difluoroethane [Ethane, 1,1-difluoro-]             | 75–37–6    | 10,000                   | f                 |
| 75–38–7    | Vinylidene fluoride [Ethene, 1,1-difluoro-]        | 75–38–7    | 10,000                   | f                 |
| 75–50–3    | Trimethylamine [Methanamine, N, N-dimethyl-]       | 75–50–3    | 10,000                   | f                 |
| 75–76–3    | Tetramethylsilane [Silane, tetramethyl-]           | 75–76–3    | 10,000                   | g                 |
| 78–78–4    | Isopentane [Butane, 2-methyl-]                     | 78–78–4    | 10,000                   | g                 |
| 78–79–5    | Isoprene [1,3-Butadiene, 2-methyl-]                | 78–79–5    | 10,000                   | g                 |
| 79–38–9    | Trifluorochloroethylene [Ethene, chlorotrifluoro-] | 79–38–9    | 10,000                   | f                 |
| 106–97–8   | Butane   | 106–97–8   | 10,000                   | f                 |
| 106–98–9   | 1-Butene   | 106–98–9   | 10,000                   | f                 |
| 106–99–0   | 1,3-Butadiene                                      | 106–99–0   | 10,000                   | f                 |
| 107–00–6   | Ethyl acetylene [1-Butyne]                         | 107–00–6   | 10,000                   | f                 |
| 107–01–7   | 2-Butene   | 107–01–7   | 10,000                   | f                 |
| 107–25–5   | Vinyl methyl ether [Ethene, methoxy-]              | 107–25–5   | 10,000                   | f                 |
| 107–31–3   | Methyl formate [Formic acid, methyl ester]         | 107–31–3   | 10,000                   | g                 |
| 109–66–0   | Pentane  | 109–66–0   | 10,000                   | g                 |
| 109–67–1   | 1-Pentene  | 109–67–1   | 10,000                   | g                 |
| 109–92–2   | Vinyl ethyl ether [Ethene, ethoxy-]                | 109–92–2   | 10,000                   | g                 |
| 109–95–5   | Ethyl nitrite [Nitrous acid, ethyl ester]          | 109–95–5   | 10,000                   | f                 |
| 115–07–1   | Propylene [1-Propene]                              | 115–07–1   | 10,000                   | f                 |
| 115–10–6   | Methyl ether [Methane, oxybis-]                    | 115–10–6   | 10,000                   | f                 |
| 115–11–7   | 2-Methylpropene [1-Propene, 2-methyl-]             | 115–11–7   | 10,000                   | f                 |
| 116–14–3   | Tetrafluoroethylene [Ethene, tetrafluoro-]         | 116–14–3   | 10,000                   | f                 |
| 124–40–3   | Dimethylamine [Methanamine, N-methyl-]             | 124–40–3   | 10,000                   | f                 |
| 460–19–5   | Cyanogen [Ethanedinitrile]                         | 460–19–5   | 10,000                   | f                 |
| 463–49–0   | Propadiene [1,2-Propadiene]                        | 463–49–0   | 10,000                   | f                 |
| 463–58–1   | Carbon oxysulfide [Carbon oxide sulfide (COS)]     | 463–58–1   | 10,000                   | f                 |
| 463–82–1   | 2,2-Dimethylpropane [Propane, 2,2-dimethyl-]       | 463–82–1   | 10,000                   | f                 |
| 504–60–9   | 1,3-Pentadiene                                     | 504–60–9   | 10,000                   | f                 |
| 557–98–2   | 2-Chloropropylene [1-Propene, 2-chloro-]           | 557–98–2   | 10,000                   | g                 |
| 563–45–1   | 3-Methyl-1-butene                                  | 563–45–1   | 10,000                   | f                 |
| 563–46–2   | 2-Methyl-1-butene                                  | 563–46–2   | 10,000                   | g                 |
| 590–18–1   | 2-Butene-cis                                       | 590–18–1   | 10,000                   | f                 |
| 590–21–6   | 1-Chloropropylene [1-Propene, 1-chloro-]           | 590–21–6   | 10,000                   | g                 |
| 598–73–2   | Bromotrifluoroethylene [Ethene, bromotrifluoro-]   | 598–73–2   | 10,000                   | f                 |
| 624–64–6   | 2-Butene-trans [2-Butene, (E)]                     | 624–64–6   | 10,000                   | f                 |
| 627–20–3   | 2-Pentene, (Z)-                                    | 627–20–3   | 10,000                   | g                 |
| 646–04–8   | 2-Pentene, (E)-                                    | 646–04–8   | 10,000                   | g                 |
| 689–97–4   | Vinyl acetylene [1-Buten-3-yne]                    | 689–97–4   | 10,000                   | f                 |
| 1333–74–0  | Hydrogen   | 1333–74–0  | 10,000                   | f                 |
| 4109–96–0  | Dichlorosilane [Silane, dichloro-]                 | 4109–96–0  | 10,000                   | f                 |
| 7791–21–1  | Chlorine monoxide [Chlorine oxide]                 | 7791–21–1  | 10,000                   | f                 |
| 7803–62–5  | Silane   | 7803–62–5  | 10,000                   | f                 |
| 10025–78–2 | Trichlorosilane [Silane, trichloro-]               | 10025–78–2 | 10,000                   | g                 |
| 25167–67–3 | Butene   | 25167–67–3 | 10,000                   | f                 |

Note: Basis for Listing: a Mandated for listing by Congress. f Flammable gas. g Volatile flammable liquid.

### Subpart G—Risk Management Plan

SOURCE: 61 FR 31726, June 20, 1996, unless otherwise noted.

EFFECTIVE DATE NOTE: At 61 FR 31726, June 20, 1996, subpart G was added, effective Aug. 19, 1996.

#### § 68.150 Submission.

(a) The owner or operator shall submit a single RMP that includes the information required by §§ 68.155 through 68.185 for all covered processes. The RMP shall be submitted in a method and format to a central point as specified by EPA prior to June 21, 1999.

(b) The owner or operator shall submit the first RMP no later than the latest of the following dates:

(1) June 21, 1999;

(2) Three years after the date on which a regulated substance is first listed under § 68.130; or

(3) The date on which a regulated substance is first present above a threshold quantity in a process.

(c) Subsequent submissions of RMPs shall be in accordance with § 68.190.

(d) Notwithstanding the provisions of §§ 68.155 to 68.190, the RMP shall exclude classified information. Subject to appropriate procedures to protect such information from public disclosure, classified data or information excluded from the RMP may be made available in a classified annex to the RMP for review by Federal and state representatives who have received the appropriate security clearances.

#### § 68.155 Executive summary.

The owner or operator shall provide in the RMP an executive summary that includes a brief description of the following elements:

(a) The accidental release prevention and emergency response policies at the stationary source;

(b) The stationary source and regulated substances handled;

(c) The worst-case release scenario(s) and the alternative release scenario(s), including administrative controls and mitigation measures to limit the distances for each reported scenario;

(d) The general accidental release prevention program and chemical-specific prevention steps;

(e) The five-year accident history;

(f) The emergency response program; and

(g) Planned changes to improve safety.

#### § 68.160 Registration.

(a) The owner or operator shall complete a single registration form and include it in the RMP. The form shall cover all regulated substances handled in covered processes.

(b) The registration shall include the following data:

(1) Stationary source name, street, city, county, state, zip code, latitude, and longitude;

(2) The stationary source Dun and Bradstreet number;

(3) Name and Dun and Bradstreet number of the corporate parent company;

(4) The name, telephone number, and mailing address of the owner or operator;

(5) The name and title of the person or position with overall responsibility for RMP elements and implementation;

(6) The name, title, telephone number, and 24-hour telephone number of the emergency contact;

(7) For each covered process, the name and CAS number of each regulated substance held above the threshold quantity in the process, the maximum quantity of each regulated substance or mixture in the process (in pounds) to two significant digits, the SIC code, and the Program level of the process;

(8) The stationary source EPA identifier;

(9) The number of full-time employees at the stationary source;

(10) Whether the stationary source is subject to 29 CFR 1910.119;

(11) Whether the stationary source is subject to 40 CFR part 355;

(12) Whether the stationary source has a CAA Title V operating permit; and

(13) The date of the last safety inspection of the stationary source by a Federal, state, or local government agency and the identity of the inspecting entity.

**§ 68.165 Offsite consequence analysis.**

(a) The owner or operator shall submit in the RMP information:

(1) One worst-case release scenario for each Program 1 process; and

(2) For Program 2 and 3 processes, one worst-case release scenario to represent all regulated toxic substances held above the threshold quantity and one worst-case release scenario to represent all regulated flammable substances held above the threshold quantity. If additional worst-case scenarios for toxics or flammables are required by § 68.25(a)(2)(iii), the owner or operator shall submit the same information on the additional scenario(s). The owner or operator of Program 2 and 3 processes shall also submit information on one alternative release scenario for each regulated toxic substance held above the threshold quantity and one alternative release scenario to represent all regulated flammable substances held above the threshold quantity.

(b) The owner or operator shall submit the following data:

- (1) Chemical name;
- (2) Physical state (toxics only);
- (3) Basis of results (give model name if used);
- (4) Scenario (explosion, fire, toxic gas release, or liquid spill and vaporization);
- (5) Quantity released in pounds;
- (6) Release rate;
- (7) Release duration;
- (8) Wind speed and atmospheric stability class (toxics only);
- (9) Topography (toxics only);
- (10) Distance to endpoint;
- (11) Public and environmental receptors within the distance;
- (12) Passive mitigation considered; and
- (13) Active mitigation considered (alternative releases only);

**§ 68.168 Five-year accident history.**

The owner or operator shall submit in the RMP the information provided in § 68.42(b) on each accident covered by § 68.42(a).

**§ 68.170 Prevention program/Program 2.**

(a) For each Program 2 process, the owner or operator shall provide in the

RMP the information indicated in paragraphs (b) through (k) of this section. If the same information applies to more than one covered process, the owner or operator may provide the information only once, but shall indicate to which processes the information applies.

(b) The SIC code for the process.

(c) The name(s) of the chemical(s) covered.

(d) The date of the most recent review or revision of the safety information and a list of Federal or state regulations or industry-specific design codes and standards used to demonstrate compliance with the safety information requirement.

(e) The date of completion of the most recent hazard review or update.

(1) The expected date of completion of any changes resulting from the hazard review;

(2) Major hazards identified;

(3) Process controls in use;

(4) Mitigation systems in use;

(5) Monitoring and detection systems in use; and

(6) Changes since the last hazard review.

(f) The date of the most recent review or revision of operating procedures.

(g) The date of the most recent review or revision of training programs;

(1) The type of training provided—classroom, classroom plus on the job, on the job; and

(2) The type of competency testing used.

(h) The date of the most recent review or revision of maintenance procedures and the date of the most recent equipment inspection or test and the equipment inspected or tested.

(i) The date of the most recent compliance audit and the expected date of completion of any changes resulting from the compliance audit.

(j) The date of the most recent incident investigation and the expected date of completion of any changes resulting from the investigation.

(k) The date of the most recent change that triggered a review or revision of safety information, the hazard review, operating or maintenance procedures, or training.

**§ 68.175 Prevention program/Program 3.**

(a) For each Program 3 process, the owner or operator shall provide the information indicated in paragraphs (b) through (p) of this section. If the same information applies to more than one covered process, the owner or operator may provide the information only once, but shall indicate to which processes the information applies.

(b) The SIC code for the process.

(c) The name(s) of the substance(s) covered.

(d) The date on which the safety information was last reviewed or revised.

(e) The date of completion of the most recent PHA or update and the technique used.

(1) The expected date of completion of any changes resulting from the PHA;

(2) Major hazards identified;

(3) Process controls in use;

(4) Mitigation systems in use;

(5) Monitoring and detection systems in use; and

(6) Changes since the last PHA.

(f) The date of the most recent review or revision of operating procedures.

(g) The date of the most recent review or revision of training programs;

(1) The type of training provided—classroom, classroom plus on the job, on the job; and

(2) The type of competency testing used.

(h) The date of the most recent review or revision of maintenance procedures and the date of the most recent equipment inspection or test and the equipment inspected or tested.

(i) The date of the most recent change that triggered management of change procedures and the date of the most recent review or revision of management of change procedures.

(j) The date of the most recent pre-startup review.

(k) The date of the most recent compliance audit and the expected date of completion of any changes resulting from the compliance audit;

(l) The date of the most recent incident investigation and the expected date of completion of any changes resulting from the investigation;

(m) The date of the most recent review or revision of employee participation plans;

(n) The date of the most recent review or revision of hot work permit procedures;

(o) The date of the most recent review or revision of contractor safety procedures; and

(p) The date of the most recent evaluation of contractor safety performance.

**§ 68.180 Emergency response program.**

(a) The owner or operator shall provide in the RMP the following information:

(1) Do you have a written emergency response plan?

(2) Does the plan include specific actions to be taken in response to an accidental releases of a regulated substance?

(3) Does the plan include procedures for informing the public and local agencies responsible for responding to accidental releases?

(4) Does the plan include information on emergency health care?

(5) The date of the most recent review or update of the emergency response plan;

(6) The date of the most recent emergency response training for employees.

(b) The owner or operator shall provide the name and telephone number of the local agency with which the plan is coordinated.

(c) The owner or operator shall list other Federal or state emergency plan requirements to which the stationary source is subject.

**§ 68.185 Certification.**

(a) For Program 1 processes, the owner or operator shall submit in the RMP the certification statement provided in § 68.12(b)(4).

(b) For all other covered processes, the owner or operator shall submit in the RMP a single certification that, to the best of the signer's knowledge, information, and belief formed after reasonable inquiry, the information submitted is true, accurate, and complete.

**§ 68.190 Updates.**

(a) The owner or operator shall review and update the RMP as specified in paragraph (b) of this section and submit it in a method and format to a

central point specified by EPA prior to June 21, 1999.

(b) The owner or operator of a stationary source shall revise and update the RMP submitted under §68.150 as follows:

(1) Within five years of its initial submission or most recent update required by paragraphs (b)(2) through (b)(7) of this section, whichever is later.

(2) No later than three years after a newly regulated substance is first listed by EPA;

(3) No later than the date on which a new regulated substance is first present in an already covered process above a threshold quantity;

(4) No later than the date on which a regulated substance is first present above a threshold quantity in a new process;

(5) Within six months of a change that requires a revised PHA or hazard review;

(6) Within six months of a change that requires a revised offsite consequence analysis as provided in §68.36; and

(7) Within six months of a change that alters the Program level that applied to any covered process.

(c) If a stationary source is no longer subject to this part, the owner or operator shall submit a revised registration to EPA within six months indicating that the stationary source is no longer covered.

### Subpart H—Other Requirements

SOURCE: 61 FR 31728, June 20, 1996, unless otherwise noted.

EFFECTIVE DATE NOTE: At 61 FR 31728, June 20, 1996, subpart H was added, effective Aug. 19, 1996.

#### §68.200 Recordkeeping.

The owner or operator shall maintain records supporting the implementation of this part for five years unless otherwise provided in subpart D of this part.

#### §68.210 Availability of information to the public.

(a) The RMP required under subpart G of this part shall be available to the public under 42 U.S.C. 7414(c).

(b) The disclosure of classified information by the Department of Defense or other Federal agencies or contractors of such agencies shall be controlled by applicable laws, regulations, or executive orders concerning the release of classified information.

#### §68.215 Permit content and air permitting authority or designated agency requirements.

(a) These requirements apply to any stationary source subject to this part 68 and parts 70 or 71 of this chapter. The 40 CFR part 70 or part 71 permit for the stationary source shall contain:

(1) A statement listing this part as an applicable requirement;

(2) Conditions that require the source owner or operator to submit:

(i) A compliance schedule for meeting the requirements of this part by the date provided in §68.10(a) or;

(ii) As part of the compliance certification submitted under 40 CFR 70.6(c)(5), a certification statement that the source is in compliance with all requirements of this part, including the registration and submission of the RMP.

(b) The owner or operator shall submit any additional relevant information requested by the air permitting authority or designated agency.

(c) For 40 CFR part 70 or part 71 permits issued prior to the deadline for registering and submitting the RMP and which do not contain permit conditions described in paragraph (a) of this section, the owner or operator or air permitting authority shall initiate permit revision or reopening according to the procedures of 40 CFR 70.7 or 71.7 to incorporate the terms and conditions consistent with paragraph (a) of this section.

(d) The state may delegate the authority to implement and enforce the requirements of paragraph (e) of this section to a state or local agency or agencies other than the air permitting authority. An up-to-date copy of any delegation instrument shall be maintained by the air permitting authority. The state may enter a written agreement with the Administrator under which EPA will implement and enforce the requirements of paragraph (e) of this section.

(e) The air permitting authority or the agency designated by delegation or agreement under paragraph (d) of this section shall, at a minimum:

(1) Verify that the source owner or operator has registered and submitted an RMP or a revised plan when required by this part;

(2) Verify that the source owner or operator has submitted a source certification or in its absence has submitted a compliance schedule consistent with paragraph (a)(2) of this section;

(3) For some or all of the sources subject to this section, use one or more mechanisms such as, but not limited to, a completeness check, source audits, record reviews, or facility inspections to ensure that permitted sources are in compliance with the requirements of this part; and

(4) Initiate enforcement action based on paragraphs (e)(1) and (e)(2) of this section as appropriate.

#### § 68.220 Audits.

(a) In addition to inspections for the purpose of regulatory development and enforcement of the Act, the implementing agency shall periodically audit RMPs submitted under subpart G of this part to review the adequacy of such RMPs and require revisions of RMPs when necessary to ensure compliance with subpart G of this part.

(b) The implementing agency shall select stationary sources for audits based on any of the following criteria:

(1) Accident history of the stationary source;

(2) Accident history of other stationary sources in the same industry;

(3) Quantity of regulated substances present at the stationary source;

(4) Location of the stationary source and its proximity to the public and environmental receptors;

(5) The presence of specific regulated substances;

(6) The hazards identified in the RMP; and

(7) A plan providing for neutral, random oversight.

(c) Exemption from audits. A stationary source with a Star or Merit ranking under OSHA's voluntary protection program shall be exempt from audits under paragraph (b)(2) and (b)(7) of this section.

(d) The implementing agency shall have access to the stationary source, supporting documentation, and any area where an accidental release could occur.

(e) Based on the audit, the implementing agency may issue the owner or operator of a stationary source a written preliminary determination of necessary revisions to the stationary source's RMP to ensure that the RMP meets the criteria of subpart G of this part. The preliminary determination shall include an explanation for the basis for the revisions, reflecting industry standards and guidelines (such as AIChE/CCPS guidelines and ASME and API standards) to the extent that such standards and guidelines are applicable, and shall include a timetable for their implementation.

(f) *Written response to a preliminary determination.* (1) The owner or operator shall respond in writing to a preliminary determination made in accordance with paragraph (e) of this section. The response shall state the owner or operator will implement the revisions contained in the preliminary determination in accordance with the timetable included in the preliminary determination or shall state that the owner or operator rejects the revisions in whole or in part. For each rejected revision, the owner or operator shall explain the basis for rejecting such revision. Such explanation may include substitute revisions.

(2) The written response under paragraph (f)(1) of this section shall be received by the implementing agency within 90 days of the issue of the preliminary determination or a shorter period of time as the implementing agency specifies in the preliminary determination as necessary to protect public health and the environment. Prior to the written response being due and upon written request from the owner or operator, the implementing agency may provide in writing additional time for the response to be received.

(g) After providing the owner or operator an opportunity to respond under paragraph (f) of this section, the implementing agency may issue the owner

or operator a written final determination of necessary revisions to the stationary source's RMP. The final determination may adopt or modify the revisions contained in the preliminary determination under paragraph (e) of this section or may adopt or modify the substitute revisions provided in the response under paragraph (f) of this section. A final determination that adopts a revision rejected by the owner or operator shall include an explanation of the basis for the revision. A final determination that fails to adopt a substitute revision provided under paragraph (f) of this section shall include an explanation of the basis for finding such substitute revision unreasonable.

(h) Thirty days after completion of the actions detailed in the implementation schedule set in the final deter-

mination under paragraph (g) of this section, the owner or operator shall be in violation of subpart G of this part and this section unless the owner or operator revises the RMP prepared under subpart G of this part as required by the final determination, and submits the revised RMP as required under § 68.150.

(i) The public shall have access to the preliminary determinations, responses, and final determinations under this section in a manner consistent with § 68.210.

(j) Nothing in this section shall preclude, limit, or interfere in any way with the authority of EPA or the state to exercise its enforcement, investigatory, and information gathering authorities concerning this part under the Act.

APPENDIX A TO PART 68—TABLE OF TOXIC ENDPOINTS  
 [As defined in §68.22 of this part]

| CAS No.    | Chemical name  | Toxic endpoint (mg/L) |
|------------|--|-----------------------|
| 107-02-8   | Acrolein [2-Propenal]  | 0.0011                |
| 107-13-1   | Acrylonitrile [2-Propenenitrile]   | 0.076                 |
| 814-68-6   | Acrylyl chloride [2-Propenoyl chloride]  | 0.00090               |
| 107-18-6   | Allyl alcohol [2-Propen-1-ol]  | 0.036                 |
| 107-11-9   | Allylamine [2-Propen-1-amine]  | 0.0032                |
| 7664-41-7  | Ammonia (anhydrous)  | 0.14                  |
| 7664-41-7  | Ammonia (conc 20% or greater)  | 0.14                  |
| 784-34-1   | Arsenous trichloride   | 0.010                 |
| 784-34-1   | Arsine   | 0.0019                |
| 10294-34-5 | Boron trichloride [Borane, trichloro-]   | 0.010                 |
| 7637-07-2  | Boron trifluoride [Borane, trifluoro-]   | 0.028                 |
| 353-42-4   | Boron trifluoride compound with methyl ether (1:1) [Boron, trifluoro[oxylbis(methane)]-, T-4 | 0.023                 |
| 7726-95-6  | Bromine  | 0.0065                |
| 75-15-0    | Carbon disulfide   | 0.16                  |
| 782-50-5   | Chlorine   | 0.0087                |
| 10049-04-4 | Chlorine dioxide [Chlorine oxide (ClO2)]   | 0.0028                |
| 67-66-3    | Chloroform [Methane, trichloro-]   | 0.49                  |
| 542-88-1   | Chloromethyl ether [Methane, oxylbis(chloro-)]   | 0.00025               |
| 107-30-2   | Chloromethyl methyl ether [Methane, chloromethoxy-]  | 0.0018                |
| 4170-30-3  | Crotonaldehyde [2-Butenal]   | 0.029                 |
| 123-73-9   | Crotonaldehyde, (E)-, [2-Butenal, (E)-]  | 0.029                 |
| 506-77-4   | Cyanogen chloride  | 0.030                 |
| 108-91-8   | Cyclohexylamine [Cyclohexanamine]  | 0.16                  |
| 19287-45-7 | Di borane  | 0.0011                |
| 75-78-5    | Dimethylchlorosilane [Silane, dichlorodimethyl-]   | 0.026                 |
| 57-14-7    | 1,1-Dimethylhydrazine [Hydrazine, 1,1-dimethyl-]   | 0.012                 |
| 106-89-8   | Epichlorohydrin [Oxirane, (chloromethyl)-]   | 0.076                 |
| 107-15-3   | Ethylenediamine [1,2-Ethanediamine]  | 0.49                  |
| 151-56-4   | Ethylenimine [Aziridine]   | 0.018                 |
| 75-21-8    | Ethylene oxide [Oxirane]   | 0.090                 |
| 7782-41-4  | Fluorine   | 0.0039                |
| 50-00-0    | Formaldehyde (solution)  | 0.012                 |
| 110-00-9   | Furan  | 0.0012                |
| 302-01-2   | Hydrazine  | 0.011                 |
| 7647-01-0  | Hydrochloric acid (conc 30% or greater)  | 0.030                 |
| 74-90-8    | Hydrocyanic acid   | 0.011                 |
| 7647-01-0  | Hydrogen chloride (anhydrous) [Hydrochloric acid]  | 0.030                 |
| 7664-39-3  | Hydrogen fluoride/Hydrofluoric acid (conc 50% or greater) [Hydrofluoric acid]                | 0.016                 |
| 7783-07-5  | Hydrogen selenide  | 0.0066                |
| 7783-06-4  | Hydrogen sulfide   | 0.042                 |
| 13463-40-6 | Iron, pentacarbonyl- [Iron carbonyl (Fe(CO)5), (TB-5-11)-]                                   | 0.00044               |
| 78-82-0    | Isobutyronitrile [Propanenitrile, 2-methyl-]   | 0.14                  |
| 108-23-6   | Isopropyl chloroformate [Carbonochloride acid, 1-methylethyl ester]                          | 0.10                  |

APPENDIX A TO PART 68—TABLE OF TOXIC ENDPOINTS—Continued  
 [As defined in §68.22 of this part]

| CAS No.    | Chemical name  | Toxic endpoint (mg/L) |
|------------|--|-----------------------|
| 126-98-7   | Methacrylonitrile [2-Propenenitrile, 2-methyl-]                              | 0.0027                |
| 74-87-3    | Methyl chloride [Methane, chloro-]   | 0.82                  |
| 79-22-1    | Methyl chloroformate [Carbonochloridic acid, methyl ester]                   | 0.0019                |
| 60-34-4    | Methyl hydrazine [Hydrazine, methyl-]  | 0.0094                |
| 624-83-9   | Methyl isocyanate [Methane, isocyanato-]                                     | 0.0012                |
| 74-93-1    | Methyl mercaptan [Methanethiol]  | 0.049                 |
| 556-64-9   | Methyl thiocyanate [Thiocyanic acid, methyl ester]                           | 0.085                 |
| 75-79-6    | Methyltrichlorosilane [Silane, trichloromethyl-]                             | 0.018                 |
| 13463-39-3 | Nickel carbonyl  | 0.00067               |
| 7697-37-2  | Nitric acid (conc 80% or greater)  | 0.026                 |
| 10102-43-9 | Nitric oxide [Nitrogen oxide (NO)]   | 0.031                 |
| 8014-95-7  | Oleum (Fuming Sulfuric acid) [Sulfuric acid, mixture with sulfur trioxide]   | 0.010                 |
| 79-21-0    | Peracetic acid [Ethaneperoxoic acid]   | 0.0045                |
| 594-42-3   | Perchloromethylmercaptan [Methanesulfonyl chloride, trichloro-]              | 0.0076                |
| 75-44-5    | Phosgene [Carbonic dichloride]   | 0.00081               |
| 7803-51-2  | Phosphine  | 0.0035                |
| 10025-87-3 | Phosphorus oxychloride [Phosphoryl chloride]                                 | 0.0030                |
| 7719-12-2  | Phosphorus trichloride [Phosphorous trichloride]                             | 0.028                 |
| 110-89-4   | Piperidine   | 0.022                 |
| 107-12-0   | Propionitrile [Propanenitrile]   | 0.0037                |
| 109-61-5   | Propyl chloroformate [Carbonochloridic acid, propylester]                    | 0.010                 |
| 75-55-8    | Propyleneimine [Aziridine, 2-methyl-]  | 0.12                  |
| 75-56-9    | Propylene oxide [Oxirane, methyl-]   | 0.59                  |
| 7446-09-5  | Sulfur dioxide (anhydrous)   | 0.0078                |
| 7783-60-0  | Sulfur tetrafluoride [Sulfur fluoride (SF4), (T-4)-]                         | 0.0092                |
| 7446-11-9  | Sulfur trioxide  | 0.010                 |
| 75-74-1    | Tetramethyllead [Plumbane, tetramethyl-]                                     | 0.0040                |
| 509-14-8   | Tetranitromethane [Methane, tetranitro-]                                     | 0.0040                |
| 7750-45-0  | Titanium tetrachloride [Titanium chloride (TiCl4) (T-4)-]                    | 0.020                 |
| 584-84-9   | Toluene 2,4-dicyanate [Benzene, 2,4-dicyanato-1-methyl-]                     | 0.0070                |
| 91-08-7    | Toluene 2,6-dicyanate [Benzene, 1,3-dicyanato-2-methyl-]                     | 0.0070                |
| 26471-62-5 | Toluene diisocyanate (unspecified isomer) [Benzene, 1,3-diisocyanatomethyl-] | 0.0070                |
| 75-77-4    | Trimethylchlorosilane [Silane, chlorotrimethyl-]                             | 0.050                 |
| 108-05-4   | Vinyl acetate monomer [Acetic acid ethenyl ester]                            | 0.26                  |

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[61 FR 31729, June 20, 1996]

EFFECTIVE DATE NOTE: At 61 FR 31729, June 20, 1996, appendix A was added to part 68, effective Aug. 19, 1996.

### PART 69—SPECIAL EXEMPTIONS FROM REQUIREMENTS OF THE CLEAN AIR ACT

#### Subpart A—Guam

Sec.

69.11 New exemptions.

69.12 Continuing exemptions.

#### Subpart B—American Samoa [Reserved]

69.21 New exemptions. [Reserved]

#### Subpart C—Commonwealth of the Northern Mariana Islands [Reserved]

69.31 New exemptions. [Reserved]

AUTHORITY: Sec. 325, Clean Air Act, as amended (42 U.S.C. 7625-1).

SOURCE: 50 FR 25577, June 20, 1985, unless otherwise noted.

#### Subpart A—Guam

##### § 69.11 New exemptions.

(a) Pursuant to section 325(a) of the Clean Air Act ("CAA") and a petition submitted by the Governor of Guam ("Petition"), the Administrator of the Environmental Protection Agency ("EPA") conditionally exempts electric generating units on Guam from certain CAA requirements.

(1) A waiver of the requirement to obtain a prevention of significant deterioration ("PSD") permit prior to construction is granted for the electric generating units identified in the Petition as Cabras Diesel No. 1, the Tenjo project, and three 6-megawatt diesel generators to be constructed at Orote, with the following conditions:

(i) Each electric generating unit shall not be operated until a final PSD permit is issued for that unit;

(ii) Each electric generating unit shall not be operated until that unit complies with all requirements of its PSD permit, including, if necessary, retrofitting with the best available control technology ("BACT");

(iii) The PSD application for each electric generating unit shall be deemed complete without the submit-

tal of the required one year of on-site meteorological data, however, EPA will not issue a PSD permit to such a unit prior to submission of such data or data which the EPA finds to be an equivalent and acceptable substitute; and

(iv) If any electric generating unit covered by this paragraph is operated either prior to the issuance of a final PSD permit or without BACT equipment, that electric generating unit shall be deemed in violation of this waiver and the CAA beginning on the date of commencement of construction of that unit.

(2) A waiver of the three nonattainment area requirements (a construction ban, the use of lowest achievable emission rate control equipment, and emission offset requirements) currently applicable to the Cabras-Piti area is granted for electric generating units with the following conditions:

(i) A tower and meteorological station shall be constructed in the Cabras-Piti area by May 1, 1993;

(ii) Meteorological data shall be collected from the Cabras-Piti station which is sufficient to run air quality models both to demonstrate no current exceedences of the primary national ambient air quality standard for sulfur dioxide ("sulfur dioxide NAAQS"), as set forth at 40 CFR 50.4, and sufficient to submit a complete request for redesignation of the area to attainment;

(iii) Ambient sulfur dioxide monitors shall be installed and operated in accordance with the procedures set forth at 40 CFR part 58, the PSD air monitoring requirements, and any additional monitoring requested by EPA to verify the efficacy of the intermittent control strategy ("ICS") of fuel switching;

(iv) Within three years from the effective date of this waiver, the Governor of Guam shall submit to the EPA a complete request that the Cabras-Piti area be redesignated to attainment for the sulfur dioxide NAAQS;

(v) Electric generating units to be constructed in the Cabras-Piti area must submit applications for PSD permits as though the area had been redesignated to attainment for the sulfur dioxide NAAQS;

(vi) The Cabras-Piti area electric generating units shall comply with the

fuel switching ICS described in paragraph (a)(3)(i) of this section;

(vii) If the collected data and air quality analysis does not demonstrate to the EPA's satisfaction that there are no current or likely future exceedences of the sulfur dioxide NAAQS, the EPA will so notify the Governor of Guam;

(viii) Within six months of such notification, the Governor of Guam shall submit to the EPA an implementation plan which includes a schedule of emission reductions and/or control measures that will ensure achievement of the sulfur dioxide NAAQS within one year of submission of the implementation plan; and

(ix) If the Governor of Guam fails to submit an implementation plan in a timely fashion, or if EPA disapproves that implementation plan, all electric generating units subject to the fuel switching ICS described in paragraph (a)(3)(i) of this section shall be fueled exclusively with low sulfur fuel.

(3) A waiver of the prohibition on the use of the ICS of fuel switching is granted for electric generating units with the following conditions:

(i) The protocol to be followed for the ICS of fuel switching for electric generating units shall be the one set forth in a separate EPA document entitled Cabras-Piti Area Intermittent Control Strategy; and

(ii) This protocol may be modified by the EPA to protect against exceedences of the sulfur dioxide NAAQS and to accommodate additional electric generating units.

(b) The waiver will be periodically reviewed (at intervals no longer than three years) and, as deemed appropriate by the Administrator, can be modified or terminated at any time through rulemaking procedures.

(c) Pursuant to Section 325(a) of the CAA and a petition submitted by the Governor of Guam on July 14, 1995 ("1995 Petition"), the Administrator of EPA conditionally exempts Guam Power Authority ("GPA") from certain CAA requirements.

(1) A waiver of the requirement to obtain a PSD permit prior to construction is granted for the electric generating unit identified in the 1995 Petition

as Cabras Unit No. 4, with the following conditions:

(i) Cabras Unit No. 4 shall not operate until a final PSD permit is received by GPA for this unit;

(ii) Cabras Unit No. 4 shall not operate until it complies with all requirements of its PSD permit, including, if necessary, retrofitting with BACT;

(iii) If Cabras Unit No. 4 operates either prior to the issuance of a final PSD permit or without BACT equipment, Cabras Unit No. 4 shall be deemed in violation of this waiver and the CAA beginning on the date of commencement of construction of the unit.

(2) A waiver of the requirement to obtain a PSD permit prior to the operation of the unit identified in the 1995 Petition as Cabras Unit No. 3 is granted subject to the following conditions:

(i) The protocol to be followed for the ICS of fuel switching for electric generating units shall be modified to require the use of fuel oil with a sulfur content of 2.00 percent or less during offshore wind conditions. This fuel shall be fired in Cabras Power Plant Units Nos. 1 through 3 and in Piti Power Plant Units Nos. 4 and 5.

(ii) Cabras Unit No. 3 shall operate in compliance with all applicable requirements in its permits to construct and to operate as issued by Guam Environmental Protection Agency.

(iii) The waiver provisions allowing Cabras Unit No. 3 to operate prior to issuance of a PSD permit shall expire on August 15, 1996, or upon the receipt by GPA of a PSD permit for Cabras Unit No. 3, whichever event occurs first.

(3) On or before October 15, 1995, GPA shall submit to EPA, Region IX, a report concerning the operation of Cabras Unit No. 3 and the construction of Cabras Unit No. 4. The report shall contain:

(i) A summary of GPA's conclusions from its wind tunnel study;

(ii) A description of the alternatives available to assure compliance with all air quality requirements, including PSD requirements, during the operation of Cabras Units Nos. 3 and 4;

(iii) A description of the alternative GPA chooses to assure compliance with all air quality requirements, including

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PSD requirements, during the operation of Cabras Units Nos. 3 and 4; and

(iv) A plan of implementation by GPA.

[58 FR 43043, Aug. 12, 1993, as amended at 60 FR 48038, Sept. 18, 1995]

### § 69.12 Continuing exemptions.

(a) Effective on the expiration date of the initial eighteen month exemption provided under section 325(b) of "the Act", the Administrator of the Environmental Protection Agency (EPA) exempts the Guam Power Authority's two sixty-six megawatt oil-fired steam units which comprise the Cabras Power Plant from sulfur dioxide requirements associated with New Source Performance Standards (NSPS) under section 111 of the Clean Air Act and from the related NSPS limitation on sulfur dioxide emissions contained in the Guam SIP.

(b) The exemption will be reviewed at intervals and upon occasions to be specified by EPA (not longer than 2 years), allowing EPA to determine whether the factual circumstances upon which it is based, including commitments made by GPA in the application for extension and the continuing attainment of the National Ambient Air Quality Standards (NAAQS) for Sulfur Dioxide, have changed. The commitments include reporting requirements specified by the Guam Environmental Protection Agency (GEPA), including but not limited to strict implementation of both the monitoring (wind direction and ambient SO<sub>2</sub> concentration) and fuel switching portions of the control strategy, reporting to GEPA of all applications of the strategy, and reporting to GEPA of laboratory analyses of percent sulfur in all new fuel stocks acquired GPA. A finding by EPA that the source is not in compliance with the terms of the exemption will be grounds for enforcement of the terms of the exemption under section 113. A finding by EPA that factual circumstances have changed will be grounds for revocation of the exemption and enforcement of the underlying Clean Air Act requirements.

(c) It is a condition of this action that GPA provide to EPA a copy of any GPA application for rate changes or for

commercial credit for construction or replacement of capital assets, simultaneously with submission of such application to the rate making authority or commercial credit institution. No later than the 90th day after a finding by EPA that the circumstances upon which the determination for continuing the exemption was originally made have changed, this exemption shall terminate unless within that time GPA submits information that it is taking all practicable steps to comply with NSPS and SIP requirements related to SO<sub>2</sub>. EPA shall review such information under the procedures it has established and shall, as appropriate, extend or terminate the exemption.

### Subpart B—American Samoa [Reserved]

#### § 69.21 New exemptions. [Reserved]

### Subpart C—Commonwealth of the Northern Mariana Islands [Reserved]

#### § 69.31 New exemptions. [Reserved]

## PART 70—STATE OPERATING PERMIT PROGRAMS

### Sec.

- 70.1 Program overview.
- 70.2 Definitions.
- 70.3 Applicability.
- 70.4 State program submittals and transition.
- 70.5 Permit applications.
- 70.6 Permit content.
- 70.7 Permit issuance, renewal, reopenings, and revisions.
- 70.8 Permit review by the EPA and affected States.
- 70.9 Fee determination and certification.
- 70.10 Federal oversight and sanctions.
- 70.11 Requirements for enforcement authority.

### APPENDIX A TO PART 70—APPROVAL STATUS OF STATE AND LOCAL OPERATING PERMITS PROGRAMS

AUTHORITY: 42 U.S.C. 7401, *et seq.*

SOURCE: 57 FR 32295, July 21, 1992, unless otherwise noted.

#### § 70.1 Program overview.

(a) The regulations in this part provide for the establishment of comprehensive State air quality permitting

systems consistent with the requirements of title V of the Clean Air Act (Act) (42 U.S.C. 7401, *et seq.*). These regulations define the minimum elements required by the Act for State operating permit programs and the corresponding standards and procedures by which the Administrator will approve, oversee, and withdraw approval of State operating permit programs.

(b) All sources subject to these regulations shall have a permit to operate that assures compliance by the source with all applicable requirements. While title V does not impose substantive new requirements, it does require that fees be imposed on sources and that certain procedural measures be adopted especially with respect to compliance.

(c) Nothing in this part shall prevent a State, or interstate permitting authority, from establishing additional or more stringent requirements not inconsistent with this Act. The EPA will approve State program submittals to the extent that they are not inconsistent with the Act and these regulations. No permit, however, can be less stringent than necessary to meet all applicable requirements. In the case of Federal intervention in the permit process, the Administrator reserves the right to implement the State operating permit program, in whole or in part, or the Federal program contained in regulations promulgated under title V of the Act.

(d) The requirements of part 70, including provisions regarding schedules for submission and approval or disapproval of permit applications, shall apply to the permitting of affected sources under the acid rain program, except as provided herein or modified in regulations promulgated under title IV of the Act (acid rain program).

(e) Issuance of State permits under this part may be coordinated with issuance of permits under the Resource Conservation and Recovery Act and under the Clean Water Act, whether issued by the State, the U.S. Environmental Protection Agency (EPA), or the U.S. Army Corps of Engineers.

#### § 70.2 Definitions.

The following definitions apply to part 70. Except as specifically provided

in this section, terms used in this part retain the meaning accorded them under the applicable requirements of the Act.

*Act* means the Clean Air Act, as amended, 42 U.S.C. 7401, *et seq.*

*Affected source* shall have the meaning given to it in the regulations promulgated under title IV of the Act.

*Affected States* are all States:

(1) Whose air quality may be affected and that are contiguous to the State in which a part 70 permit, permit modification or permit renewal is being proposed; or

(2) That are within 50 miles of the permitted source.

*Affected unit* shall have the meaning given to it in the regulations promulgated under title IV of the Act.

*Applicable requirement* means all of the following as they apply to emissions units in a part 70 source (including requirements that have been promulgated or approved by EPA through rulemaking at the time of issuance but have future-effective compliance dates):

(1) Any standard or other requirement provided for in the applicable implementation plan approved or promulgated by EPA through rulemaking under title I of the Act that implements the relevant requirements of the Act, including any revisions to that plan promulgated in part 52 of this chapter;

(2) Any term or condition of any preconstruction permits issued pursuant to regulations approved or promulgated through rulemaking under title I, including parts C or D, of the Act;

(3) Any standard or other requirement under section 111 of the Act, including section 111(d);

(4) Any standard or other requirement under section 112 of the Act, including any requirement concerning accident prevention under section 112(r)(7) of the Act;

(5) Any standard or other requirement of the acid rain program under title IV of the Act or the regulations promulgated thereunder;

(6) Any requirements established pursuant to section 504(b) or section 114(a)(3) of the Act;

(7) Any standard or other requirement governing solid waste incineration, under section 129 of the Act;

(8) Any standard or other requirement for consumer and commercial products, under section 183(e) of the Act;

(9) Any standard or other requirement for tank vessels under section 183(f) of the Act;

(10) Any standard or other requirement of the program to control air pollution from outer continental shelf sources, under section 328 of the Act;

(11) Any standard or other requirement of the regulations promulgated to protect stratospheric ozone under title VI of the Act, unless the Administrator has determined that such requirements need not be contained in a title V permit; and

(12) Any national ambient air quality standard or increment or visibility requirement under part C of title I of the Act, but only as it would apply to temporary sources permitted pursuant to section 504(e) of the Act.

*Designated representative* shall have the meaning given to it in section 402(26) of the Act and the regulations promulgated thereunder.

*Draft permit* means the version of a permit for which the permitting authority offers public participation under § 70.7(h) or affected State review under § 70.8 of this part.

*Emissions allowable under the permit* means a federally enforceable permit term or condition determined at issuance to be required by an applicable requirement that establishes an emissions limit (including a work practice standard) or a federally enforceable emissions cap that the source has assumed to avoid an applicable requirement to which the source would otherwise be subject.

*Emissions unit* means any part or activity of a stationary source that emits or has the potential to emit any regulated air pollutant or any pollutant listed under section 112(b) of the Act. This term is not meant to alter or affect the definition of the term "unit" for purposes of title IV of the Act.

*The EPA or the Administrator* means the Administrator of the EPA or his designee.

*Final permit* means the version of a part 70 permit issued by the permitting authority that has completed all review procedures required by §§ 70.7 and 70.8 of this part.

*Fugitive emissions* are those emissions which could not reasonably pass through a stack, chimney, vent, or other functionally-equivalent opening.

*General permit* means a part 70 permit that meets the requirements of § 70.6(d).

*Major source* means any stationary source (or any group of stationary sources that are located on one or more contiguous or adjacent properties, and are under common control of the same person (or persons under common control)) belonging to a single major industrial grouping and that are described in paragraph (1), (2), or (3) of this definition. For the purposes of defining "major source," a stationary source or group of stationary sources shall be considered part of a single industrial grouping if all of the pollutant emitting activities at such source or group of sources on contiguous or adjacent properties belong to the same Major Group (i.e., all have the same two-digit code) as described in the Standard Industrial Classification Manual, 1987.

(1) A major source under section 112 of the Act, which is defined as:

(i) For pollutants other than radionuclides, any stationary source or group of stationary sources located within a contiguous area and under common control that emits or has the potential to emit, in the aggregate, 10 tons per year (tpy) or more of any hazardous air pollutant which has been listed pursuant to section 112(b) of the Act, 25 tpy or more of any combination of such hazardous air pollutants, or such lesser quantity as the Administrator may establish by rule. Notwithstanding the preceding sentence, emissions from any oil or gas exploration or production well (with its associated equipment) and emissions from any pipeline compressor or pump station shall not be aggregated with emissions from other similar units, whether or not such units are in a contiguous area or under common control, to determine whether such units or stations are major sources; or

(ii) For radionuclides, "major source" shall have the meaning specified by the Administrator by rule.

(2) A major stationary source of air pollutants, as defined in section 302 of the Act, that directly emits or has the potential to emit, 100 tpy or more of any air pollutant (including any major source of fugitive emissions of any such pollutant, as determined by rule by the Administrator). The fugitive emissions of a stationary source shall not be considered in determining whether it is a major stationary source for the purposes of section 302(j) of the Act, unless the source belongs to one of the following categories of stationary source:

- (i) Coal cleaning plants (with thermal dryers);
- (ii) Kraft pulp mills;
- (iii) Portland cement plants;
- (iv) Primary zinc smelters;
- (v) Iron and steel mills;
- (vi) Primary aluminum ore reduction plants;
- (vii) Primary copper smelters;
- (viii) Municipal incinerators capable of charging more than 250 tons of refuse per day;
- (ix) Hydrofluoric, sulfuric, or nitric acid plants;
- (x) Petroleum refineries;
- (xi) Lime plants;
- (xii) Phosphate rock processing plants;
- (xiii) Coke oven batteries;
- (xiv) Sulfur recovery plants;
- (xv) Carbon black plants (furnace process);
- (xvi) Primary lead smelters;
- (xvii) Fuel conversion plants;
- (xviii) Sintering plants;
- (xix) Secondary metal production plants;
- (xx) Chemical process plants;
- (xxi) Fossil-fuel boilers (or combination thereof) totaling more than 250 million British thermal units per hour heat input;
- (xxii) Petroleum storage and transfer units with a total storage capacity exceeding 300,000 barrels;
- (xxiii) Taconite ore processing plants;
- (xxiv) Glass fiber processing plants;
- (xxv) Charcoal production plants;

(xxvi) Fossil-fuel-fired steam electric plants of more than 250 million British thermal units per hour heat input; or

(xxvii) All other stationary source categories regulated by a standard promulgated under section 111 or 112 of the Act, but only with respect to those air pollutants that have been regulated for that category;

(3) A major stationary source as defined in part D of title I of the Act, including:

(i) For ozone nonattainment areas, sources with the potential to emit 100 tpy or more of volatile organic compounds or oxides of nitrogen in areas classified as "marginal" or "moderate," 50 tpy or more in areas classified as "serious," 25 tpy or more in areas classified as "severe," and 10 tpy or more in areas classified as "extreme"; except that the references in this paragraph to 100, 50, 25 and 10 tpy of nitrogen oxides shall not apply with respect to any source for which the Administrator has made a finding, under section 182(f) (1) or (2) of the Act, that requirements under section 182(f) of the Act do not apply;

(ii) For ozone transport regions established pursuant to section 184 of the Act, sources with the potential to emit 50 tpy or more of volatile organic compounds;

(iii) For carbon monoxide nonattainment areas:

(A) That are classified as "serious," and

(B) in which stationary sources contribute significantly to carbon monoxide levels as determined under rules issued by the Administrator, sources with the potential to emit 50 tpy or more of carbon monoxide; and

(iv) For particulate matter (PM-10) nonattainment areas classified as "serious," sources with the potential to emit 70 tpy or more of PM-10.

*Part 70 permit* or *permit* (unless the context suggests otherwise) means any permit or group of permits covering a part 70 source that is issued, renewed, amended, or revised pursuant to this part.

*Part 70 program* or *State program* means a program approved by the Administrator under this part.

*Part 70 source* means any source subject to the permitting requirements of

this part, as provided in §§70.3(a) and 70.3(b) of this part.

*Permit modification* means a revision to a part 70 permit that meets the requirements of §70.7(e) of this part.

*Permit program costs* means all reasonable (direct and indirect) costs required to develop and administer a permit program, as set forth in §70.9(b) of this part (whether such costs are incurred by the permitting authority or other State or local agencies that do not issue permits directly, but that support permit issuance or administration).

*Permit revision* means any permit modification or administrative permit amendment.

*Permitting authority* means either of the following:

(1) The Administrator, in the case of EPA-implemented programs; or

(2) The State air pollution control agency, local agency, other State agency, or other agency authorized by the Administrator to carry out a permit program under this part.

*Potential to emit* means the maximum capacity of a stationary source to emit any air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of a source to emit an air pollutant, including air pollution control equipment and restrictions on hours of operation or on the type or amount of material combusted, stored, or processed, shall be treated as part of its design if the limitation is enforceable by the Administrator. This term does not alter or affect the use of this term for any other purposes under the Act, or the term "capacity factor" as used in title IV of the Act or the regulations promulgated thereunder.

*Proposed permit* means the version of a permit that the permitting authority proposes to issue and forwards to the Administrator for review in compliance with §70.8.

*Regulated air pollutant* means the following:

(1) Nitrogen oxides or any volatile organic compounds;

(2) Any pollutant for which a national ambient air quality standard has been promulgated;

(3) Any pollutant that is subject to any standard promulgated under section 111 of the Act;

(4) Any Class I or II substance subject to a standard promulgated under or established by title VI of the Act; or

(5) Any pollutant subject to a standard promulgated under section 112 or other requirements established under section 112 of the Act, including sections 112(g), (j), and (r) of the Act, including the following:

(i) Any pollutant subject to requirements under section 112(j) of the Act. If the Administrator fails to promulgate a standard by the date established pursuant to section 112(e) of the Act, any pollutant for which a subject source would be major shall be considered to be regulated on the date 18 months after the applicable date established pursuant to section 112(e) of the Act; and

(ii) Any pollutant for which the requirements of section 112(g)(2) of the Act have been met, but only with respect to the individual source subject to section 112(g)(2) requirement.

*Regulated pollutant (for presumptive fee calculation)*, which is used only for purposes of §70.9(b)(2), means any "regulated air pollutant" except the following:

(1) Carbon monoxide;

(2) Any pollutant that is a regulated air pollutant solely because it is a Class I or II substance to a standard promulgated under or established by title VI of the Act; or

(3) Any pollutant that is a regulated air pollutant solely because it is subject to a standard or regulation under section 112(r) of the Act.

*Renewal* means the process by which a permit is reissued at the end of its term.

*Responsible official* means one of the following:

(1) For a corporation: a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation, or a duly authorized representative of such person if the representative is responsible for the overall operation of one or more manufacturing, production, or operating facilities applying for or subject to a permit and either:

(i) The facilities employ more than 250 persons or have gross annual sales or expenditures exceeding \$25 million (in second quarter 1980 dollars); or

(ii) The delegation of authority to such representatives is approved in advance by the permitting authority;

(2) For a partnership or sole proprietorship: a general partner or the proprietor, respectively;

(3) For a municipality, State, Federal, or other public agency: Either a principal executive officer or ranking elected official. For the purposes of this part, a principal executive officer of a Federal agency includes the chief executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., a Regional Administrator of EPA); or

(4) For affected sources:

(i) The designated representative in so far as actions, standards, requirements, or prohibitions under title IV of the Act or the regulations promulgated thereunder are concerned; and

(ii) The designated representative for any other purposes under part 70.

*Section 502(b)(10) changes* are changes that contravene an express permit term. Such changes do not include changes that would violate applicable requirements or contravene federally enforceable permit terms and conditions that are monitoring (including test methods), recordkeeping, reporting, or compliance certification requirements.

*State* means any non-Federal permitting authority, including any local agency, interstate association, or statewide program. The term "State" also includes the District of Columbia, the Commonwealth of Puerto Rico, the Virgin Islands, Guam, American Samoa, and the Commonwealth of the Northern Mariana Islands. Where such meaning is clear from the context, "State" shall have its conventional meaning. For purposes of the acid rain program, the term "State" shall be limited to authorities within the 48 contiguous States and the District of Columbia as provided in section 402(14) of the Act.

*Stationary source* means any building, structure, facility, or installation that emits or may emit any regulated air

pollutant or any pollutant listed under section 112(b) of the Act.

*Whole program* means a part 70 permit program, or any combination of partial programs, that meet all the requirements of these regulations and cover all the part 70 sources in the entire State. For the purposes of this definition, the term "State" does not include local permitting authorities, but refers only to the entire State, Commonwealth, or Territory.

### § 70.3 Applicability.

(a) *Part 70 sources.* A State program with whole or partial approval under this part must provide for permitting of at least the following sources:

(1) Any major source;

(2) Any source, including an area source, subject to a standard, limitation, or other requirement under section 111 of the Act;

(3) Any source, including an area source, subject to a standard or other requirement under section 112 of the Act, except that a source is not required to obtain a permit solely because it is subject to regulations or requirements under section 112(r) of this Act;

(4) Any affected source; and

(5) Any source in a source category designated by the Administrator pursuant to this section.

(b) *Source category exemptions.* (1) All sources listed in paragraph (a) of this section that are not major sources, affected sources, or solid waste incineration units required to obtain a permit pursuant to section 129(e) of the Act, may be exempted by the State from the obligation to obtain a part 70 permit until such time as the Administrator completes a rulemaking to determine how the program should be structured for nonmajor sources and the appropriateness of any permanent exemptions in addition to those provided for in paragraph (b)(4) of this section.

(2) In the case of nonmajor sources subject to a standard or other requirement under either section 111 or section 112 of the Act after July 21, 1992 publication, the Administrator will determine whether to exempt any or all such applicable sources from the requirement to obtain a part 70 permit at

the time that the new standard is promulgated.

(3) Any source listed in paragraph (a) of this section exempt from the requirement to obtain a permit under this section may opt to apply for a permit under a part 70 program.

(4) Unless otherwise required by the State to obtain a part 70 permit, the following source categories are exempted from the obligation to obtain a part 70 permit:

(i) All sources and source categories that would be required to obtain a permit solely because they are subject to part 60, subpart AAA—Standards of Performance for New Residential Wood Heaters; and

(ii) All sources and source categories that would be required to obtain a permit solely because they are subject to part 61, subpart M—National Emission Standard for Hazardous Air Pollutants for Asbestos, §61.145, Standard for Demolition and Renovation.

(c) *Emissions units and part 70 sources.*

(1) For major sources, the permitting authority shall include in the permit all applicable requirements for all relevant emissions units in the major source.

(2) For any nonmajor source subject to the part 70 program under paragraph (a) or (b) of this section, the permitting authority shall include in the permit all applicable requirements applicable to emissions units that cause the source to be subject to the part 70 program.

(d) *Fugitive emissions.* Fugitive emissions from a part 70 source shall be included in the permit application and the part 70 permit in the same manner as stack emissions, regardless of whether the source category in question is included in the list of sources contained in the definition of major source.

#### **§70.4 State program submittals and transition.**

(a) *Date for submittal.* Not later than November 15, 1993, the Governor of each State shall submit to the Administrator for approval a proposed part 70 program, under State law or under an interstate compact, meeting the requirements of this part. If part 70 is subsequently revised such that the Ad-

ministrator determines that it is necessary to require a change to an approved State program, the required revisions to the program shall be submitted within 12 months of the final changes to part 70 or within such other period as authorized by the Administrator.

(b) *Elements of the initial program submission.* Any State that seeks to administer a program under this part shall submit to the Administrator a letter of submittal from the Governor or his designee requesting EPA approval of the program and at least three copies of a program submission. The submission shall contain the following:

(1) A complete program description describing how the State intends to carry out its responsibilities under this part.

(2) The regulations that comprise the permitting program, reasonably available evidence of their procedurally correct adoption, (including any notice of public comment and any significant comments received on the proposed part 70 program as requested by the Administrator), and copies of all applicable State or local statutes and regulations including those governing State administrative procedures that either authorize the part 70 program or restrict its implementation. The State shall include with the regulations any criteria used to determine insignificant activities or emission levels for purposes of determining complete applications consistent with §70.5(c) of this part.

(3) A legal opinion from the Attorney General for the State, or the attorney for those State, local, or interstate air pollution control agencies that have independent legal counsel, stating that the laws of the State, locality, or interstate compact provide adequate authority to carry out all aspects of the program. This statement shall include citations to the specific states, administrative regulations, and, where appropriate, judicial decisions that demonstrate adequate authority. State statutes and regulations cited by the State Attorney General or independent legal counsel shall be in the form of lawfully adopted State statutes and regulations at the time the statement is signed and shall be fully effective by

the time the program is approved. To qualify as "independent legal counsel," the attorney signing the statement required by this section shall have full authority to independently represent the State agency in court on all matters pertaining to the State program. The legal opinion shall also include a demonstration of adequate legal authority to carry out the requirements of this part, including authority to carry out each of the following:

(i) Issue permits and assure compliance with each applicable requirement and requirement of this part by all part 70 sources.

(ii) Incorporate monitoring, record-keeping, reporting, and compliance certification requirements into part 70 permits consistent with § 70.6.

(iii) Issue permits for a fixed term of 5 years in the case of permits with acid rain provisions and issue all other permits for a period not to exceed 5 years, except for permits issued for solid waste incineration units combusting municipal waste subject to standards under section 129(e) of the Act.

(iv) Issue permits for solid waste incineration units combusting municipal waste subject to standards under section 129(e) of the Act for a period not to exceed 12 years and review such permits at least every 5 years. No permit for a solid waste incineration unit may be issued by an agency, instrumentality or person that is also responsible, in whole or in part, for the design and construction or operation of the unit.

(v) Incorporate into permits all applicable requirements and requirements of this part.

(vi) Terminate, modify, or revoke and reissue permits for cause.

(vii) Enforce permits, permit fee requirements, and the requirement to obtain a permit, as specified in § 70.11.

(viii) Make available to the public any permit application, compliance plan, permit, and monitoring and compliance, certification report pursuant to section 503(e) of the Act, except for information entitled to confidential treatment pursuant to section 114(c) of the Act. The contents of a part 70 permit shall not be entitled to protection under section 115(c) of the Act.

(ix) Not issue a permit if the Administrator timely objects to its issuance

pursuant to § 70.8(c) of this part or, if the permit has not already been issued, to § 70.8(d) of this part.

(x) Provide an opportunity for judicial review in State court of the final permit action by the applicant, any person who participated in the public participation process provided pursuant to § 70.7(h) of this part, and any other person who could obtain judicial review of such actions under State laws.

(xi) Provide that, solely for the purposes of obtaining judicial review in State court for failure to take final action, final permit action shall include the failure of the permitting authority to take final action on an application for a permit, permit renewal, or permit revision within the time specified in the State program. If the State program allows sources to make changes subject to post hoc review [as set forth in §§ 70.7(e)(2) and (3) of this part], the permitting authority's failure to take final action within 90 days of receipt of an application requesting minor permit modification procedures (or 180 days for modifications subject to group processing requirements) must be subject to judicial review in State court.

(xii) Provide that the opportunity for judicial review described in paragraph (b)(3)(x) of this section shall be the exclusive means for obtaining judicial review of the terms and conditions of permits, and require that such petitions for judicial review must be filed no later than 90 days after the final permit action, or such shorter time as the State shall designate. Notwithstanding the preceding requirement, petitions for judicial review of final permit actions can be filed after the deadline designated by the State, only if they are based solely on grounds arising after the deadline for judicial review. Such petitions shall be filed no later than 90 days after the new grounds for review arise or such shorter time as the State shall designate. If the final permit action being challenged is the permitting authority's failure to take final action, a petition for judicial review may be filed any time before the permitting authority denies the permit or issues the final permit.

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(xiii) Ensure that the authority of the State/local permitting Agency is not used to modify the acid rain program requirements.

(4) Relevant permitting program documentation not contained in the State regulations, including the following:

(i) Copies of the permit form(s), application form(s), and reporting form(s) the State intends to employ in its program; and

(ii) Relevant guidance issued by the State to assist in the implementation of its permitting program, including criteria for monitoring source compliance (e.g., inspection strategies).

(5) A complete description of the State's compliance tracking and enforcement program or reference to any agreement the State has with EPA that provides this information.

(6) A showing of adequate authority and procedures to determine within 60 days of receipt whether applications (including renewal applications) are complete, to request such other information as needed to process the application, and to take final action on complete applications within 18 months of the date of their submittal, except for initial permit applications, for which the permitting authority may take up to 3 years from the effective date of the program to take final action on the application, as provided for in the transition plan.

(7) A demonstration, consistent with § 70.9, that the permit fees required by the State program are sufficient to cover permit program costs.

(8) A statement that adequate personnel and funding have been made available to develop, administer, and enforce the program. This statement shall include the following:

(i) A description in narrative form of the scope, structure, coverage, and processes of the State program.

(ii) A description of the organization and structure of the agency or agencies that will have responsibility for administering the program, including the information specified in this paragraph. If more than one agency is responsible for administration of a program, the responsibilities of each agency must be delineated, their procedures for coordination must be set forth, and an agency shall be designated as a "lead agen-

cy" to facilitate communications between EPA and the other agencies having program responsibility.

(iii) A description of the agency staff who will carry out the State program, including the number, occupation, and general duties of the employees. The State need not submit complete job descriptions for every employee carrying out the State program.

(iv) A description of applicable State procedures, including permitting procedures and any State administrative or judicial review procedures.

(v) An estimate of the permit program costs for the first 4 years after approval, and a description of how the State plans to cover those costs.

(9) A commitment from the State to submit, at least annually to the Administrator, information regarding the State's enforcement activities including, but not limited to, the number of criminal and civil, judicial and administrative enforcement actions either commenced or concluded; the penalties, fines, and sentences obtained in those actions; and the number of administrative orders issued.

(10) A requirement under State law that, if a timely and complete application for a permit renewal is submitted, consistent with § 70.5(a)(2), but the State has failed to issue or deny the renewal permit before the end of the term of the previous permit, then:

(i) The permit shall not expire until the renewal permit has been issued or denied and any permit shield that may be granted pursuant to § 70.6(f) may extend beyond the original permit term until renewal; or

(ii) All the terms and conditions of the permit including any permit shield that may be granted pursuant to § 70.6(f) shall remain in effect until the renewal permit has been issued or denied.

(11) A transition plan providing a schedule for submittal and final action on initial permit applications for all part 70 sources. This plan shall provide that:

(i) Submittal of permit applications by all part 70 sources (including any sources subject to a partial or interim program) shall occur within 1 year after the effective date of the permit program;

(ii) Final action shall be taken on at least one-third of such applications annually over a period not to exceed 3 years after such effective date;

(iii) Any complete permit application containing an early reduction demonstration under section 112(i)(5) of the Act shall be acted on within 9 months of receipt of the complete application; and

(iv) Submittal of permit applications and the permitting of affected sources shall occur in accordance with the deadlines in title IV of the Act and the regulations promulgated thereunder.

(12) Provisions consistent with paragraphs (b)(12)(i) through (iii) of this section to allow changes within a permitted facility without requiring a permit revision, if the changes are not modifications under any provision of title I of the Act and the changes do not exceed the emissions allowable under the permit (whether expressed therein as a rate of emissions or in the terms of total emissions): *Provided*, That the facility provides the Administrator and the permitting authority with written notification as required below in advance of the proposed changes, which shall be a minimum of 7 days, unless the permitting authority provides in its regulations a different time frame for emergencies. The source, permitting authority, and EPA shall attach each such notice to their copy of the relevant permit. The following provisions implement this requirement of an approvable part 70 permit program:

(i) The program shall allow permitted sources to make section 502(b)(10) changes without requiring a permit revision, if the changes are not modifications under any provision of title I of the Act and the changes do not exceed the emissions allowable under the permit (whether expressed therein as a rate of emissions or in terms of total emissions).

(A) For each such change, the written notification required above shall include a brief description of the change within the permitted facility, the date on which the change will occur, any change in emissions, and any permit term or condition that is no longer applicable as a result of the change.

(B) The permit shield described in §70.6(f) of this part shall not apply to any change made pursuant to this paragraph (b)(12)(i) of this section.

(ii) The program may provide for permitted sources to trade increases and decreases in emissions in the permitted facility, where the applicable implementation plan provides for such emissions trades without requiring a permit revision and based on the 7-day notice prescribed in this paragraph (b)(12)(ii) of this section. This provision is available in those cases where the permit does not already provide for such emissions trading.

(A) Under this paragraph (b)(12)(ii) of this section, the written notification required above shall include such information as may be required by the provision in the applicable implementation plan authorizing the emissions trade, including at a minimum, when the proposed change will occur, a description of each such change, any change in emissions, the permit requirements with which the source will comply using the emissions trading provisions of the applicable implementation plan, and the pollutants emitted subject to the emissions trade. The notice shall also refer to the provisions with which the source will comply in the applicable implementation plan and that provide for the emissions trade.

(B) The permit shield described in §70.6(f) of this part shall not extend to any change made under this paragraph (b)(12)(ii) of this section. Compliance with the permit requirements that the source will meet using the emissions trade shall be determined according to requirements of the applicable implementation plan authorizing the emissions trade.

(iii) The program shall require the permitting authority, if a permit applicant requests it, to issue permits that contain terms and conditions, including all terms required under §70.6 (a) and (c) of this part to determine compliance, allowing for the trading of emissions increases and decreases in the permitted facility solely for the purpose of complying with a federally-enforceable emissions cap that is established in the permit independent of otherwise applicable requirements. The

permit applicant shall include in its application proposed replicable procedures and permit terms that ensure the emissions trades are quantifiable and enforceable. The permitting authority shall not be required to include in the emissions trading provisions any emissions units for which emissions are not quantifiable or for which there are no replicable procedures to enforce the emissions trades. The permit shall also require compliance with all applicable requirements.

(A) Under this paragraph (b)(12)(iii) of this section, the written notification required above shall state when the change will occur and shall describe the changes in emissions that will result and how these increases and decreases in emissions will comply with the terms and conditions of the permit.

(B) The permit shield described in § 70.6(f) of this part may extend to terms and conditions that allow such increases and decreases in emissions.

(13) Provisions for adequate, streamlined, and reasonable procedures for expeditious review of permit revisions or modifications. The program may meet this requirement by using procedures that meet the requirements of § 70.7(e) or that are substantially equivalent to those provided in § 70.7(e) of this part.

(14) If a State allows changes that are not addressed or prohibited by the permit, other than those described in paragraph (b)(15) of this section, to be made without a permit revision, provisions meeting the requirements of paragraphs (b)(14) (i) through (iii) of this section. Although a State may, as a matter of State law, prohibit sources from making such changes without a permit revision, any such prohibition shall not be enforceable by the Administrator or by citizens under the Act unless the prohibition is required by an applicable requirement. Any State procedures implementing such a State law prohibition must include the requirements of paragraphs (b)(14) (i) through (iii) of this section.

(i) Each such change shall meet all applicable requirements and shall not violate any existing permit term or condition.

(ii) Sources must provide contemporaneous written notice to the permitting authority and EPA of each

such change, except for changes that qualify as insignificant under the provisions adopted pursuant to § 70.5(c) of this part. Such written notice shall describe each such change, including the date, any change in emissions, pollutants emitted, and any applicable requirement that would apply as a result of the change.

(iii) The change shall not qualify for the shield under § 70.6(f) of this part.

(iv) The permittee shall keep a record describing changes made at the source that result in emissions of a regulated air pollutant subject to an applicable requirement, but not otherwise regulated under the permit, and the emissions resulting from those changes.

(15) Provisions prohibiting sources from making, without a permit revision, changes that are not addressed or prohibited by the part 70 permit, if such changes are subject to any requirements under title IV of the Act or are modifications under any provision of title I of the Act.

(16) Provisions requiring the permitting authority to implement the requirements of §§ 70.6 and 70.7 of this part.

(c) *Partial programs.* (1) The EPA may approve a partial program that applies to all part 70 sources within a limited geographic area (e.g., a local agency program covering all sources within the agency's jurisdiction). To be approvable, any partial program must, at a minimum, ensure compliance with all of the following applicable requirements, as they apply to the sources covered by the partial program:

(i) All requirements of title V of the Act and of part 70;

(ii) All applicable requirements of title IV of the Act and regulations promulgated thereunder which apply to affected sources; and

(iii) All applicable requirements of title I of the Act, including those established under sections 111 and 112 of the Act.

(2) Any partial permitting program, such as that of a local air pollution control agency, providing for the issuance of permits by a permitting authority other than the State, shall be

consistent with all the elements required in paragraphs (b) (1) through (16) of this section.

(3) Approval of any partial program does not relieve the State from its obligation to submit a whole program or from application of any sanctions for failure to submit a fully-approvable whole program.

(4) Any partial program may obtain interim approval under paragraph (d) of this section if it substantially meets the requirements of this paragraph (c) of this section.

(d) *Interim approval.* (1) If a program (including a partial permit program) submitted under this part substantially meets the requirements of this part, but is not fully approvable, the Administrator may be rule grant the program interim approval.

(2) Interim approval shall expire on a date set by the Administrator (but not later than 2 years after such approval), and may not be renewed. Sources shall become subject to the program according to the schedule approved in the State program. Permits granted under an interim approval shall expire at the end of their fixed term, unless renewed under a part 70 program.

(3) The EPA may grant interim approval to any program if it meets each of the following minimum requirements and otherwise substantially meets the requirements of this part:

(i) *Adequate fees.* The program must provide for collecting permit fees adequate for it to meet the requirements of § 70.9 of this part.

(ii) *Applicable requirements.* (A) The program must provide for adequate authority to issue permits that assure compliance with the requirements of paragraph (c)(1) of this section for those major sources covered by the program.

(B) Notwithstanding paragraph (d)(3)(ii)(A) of this section, where a State or local permitting authority lacks adequate authority to issue or revise permits that assure compliance with applicable requirements established exclusively through an EPA-approved minor NSR program, EPA may grant interim approval to the program upon a showing by the permitting authority of compelling reasons which support the interim approval.

(C) Any part 70 permit issued during an interim approval granted under paragraph (d)(3)(ii)(B) of this section that does not incorporate minor NSR requirements shall:

(1) Note this fact in the permit;

(2) Indicate how citizens may obtain access to excluded minor NSR permits;

(3) Provide a cross reference, such as a listing of the permit number, for each minor NSR permit containing an excluded minor NSR term; and

(4) State that the minor NSR requirements which are excluded are not eligible for the permit shield under § 70.6(f).

(D) A program receiving interim approval for the reason specified in (d)(3)(ii)(B) of this section must, upon or before granting of full approval, institute proceedings to reopen part 70 permits to incorporate excluded minor NSR permits as terms of the part 70 permits, as required by § 70.7(f)(1)(iv). Such reopening need not follow full permit issuance procedures nor the notice requirement of § 70.7(f)(3), but may instead follow the permit revision procedure in effect under the State's approved part 70 program for incorporation of minor NSR permits.

(iii) *Fixed term.* The program must provide for fixed permit terms, consistent with paragraphs (b)(3) (iii) and (iv) of this section.

(iv) *Public participation.* The program must provide for adequate public notice of and an opportunity for public comment and a hearing on draft permits and revisions, except for modifications qualifying for minor permit modification procedures under § 70.7(e) of this part.

(v) *EPA and affected State review.* The program must allow EPA an opportunity to review each proposed permit, including permit revisions, and to object to its issuance consistent with § 70.8(c) of this part. The program must provide for affected State review consistent with § 70.8(b) of this part.

(vi) *Permit issuance.* The program must provide that the proposed permit will not be issued if EPA objects to its issuance.

(vii) *Enforcement.* The program must contain authority to enforce permits,

including the authority to assess penalties against sources that do not comply with their permits or with the requirement to obtain a permit.

(viii) *Operational flexibility.* The program must allow changes within a permitted facility without requiring a permit revision, if the changes are not modifications under any provision of title I of the act and the changes do not exceed the emissions allowable under the permit, consistent with paragraph (b)(12) of this section.

(ix) *Streamlined procedures.* The program must provide for streamlined procedures for issuing and revising permits and determining expeditiously after receipt of a permit application or application for a permit revision whether such application is complete.

(x) *Permit application.* The program submittal must include copies of the permit application and reporting form(s) that the State will use in implementing the interim program.

(xi) *Alternative scenarios.* The program submittal must include provisions to insure that alternate scenarios requested by the source are included in the part 70 permit pursuant to § 70.6(a)(9) of this part.

(e) *EPA review of permit program submittals.* Within 1 year after receiving a program submittal, the Administrator shall approve or disapprove the program, in whole or in part, by publishing a notice in the FEDERAL REGISTER. Prior to such notice, the Administrator shall provide an opportunity for public comment on such approval or disapproval. Any EPA action disapproving a program, in whole or in part, shall include a statement of the revisions or modifications necessary to obtain full approval. The Administrator shall approve State programs that conform to the requirements of this part.

(1) Within 60 days of receipt by EPA of a State program submission, EPA will notify the State whether its submission is complete enough to warrant review by EPA for either full, partial, or interim approval. If EPA finds that a State's submission is complete, the 1-year review period (i.e., the period of time allotted for formal EPA review of a proposed State program) shall be deemed to have begun on the date of receipt of the State's submission. If

EPA finds that a State's submission is incomplete, the 1-year review period shall not begin until all the necessary information is received by EPA.

(2) If the State's submission is materially changed during the 1-year review period, the Administrator may extend the review period for no more than 1 year following receipt of the revised submission.

(3) In any notice granting interim or partial approval, the Administrator shall specify the changes or additions that must be made before the program can receive full approval and the conditions for implementation of the program until that time.

(f) *State response to EPA review of program—(1) Disapproval.* The State shall submit to EPA program revisions or modifications required by the Administrator's action disapproving the program, or any part thereof, within 180 days of receiving notification of the disapproval.

(2) *Interim approval.* The State shall submit to EPA changes to the program addressing the deficiencies specified in the interim approval no later than 6 months prior to the expiration of the interim approval.

(g) *Effective date.* The effective date of a part 70 program, including any partial or interim program approved under this part, shall be the effective date of approval by the Administrator.

(h) *Individual permit transition.* Upon approval of a State program, the Administrator shall suspend the issuance of Federal permits for those activities subject to the approved State program, except that the Administrator will continue to issue phase I acid rain permits. After program approval, EPA shall retain jurisdiction over any permit (including any general permit) that it has issued unless arrangements have been made with the State to assume responsibility for these permits. Where EPA retains jurisdiction, it will continue to process permit appeals and modification requests, to conduct inspections, and to receive and review monitoring reports. If any permit appeal or modification request is not finally resolved when the federally-issued permit expires, EPA may, with the consent of the State, retain jurisdiction until the matter is resolved.

Upon request by a State, the Administrator may delegate authority to implement all or part of a permit issued by EPA, if a part 70 program has been approved for the State. The delegation may include authorization for the State to collect appropriate fees, consistent with § 70.9 of this part.

(i) *Program revisions.* Either EPA or a State with an approved program may initiate a program revision. Program revision may be necessary when the relevant Federal or State statutes or regulations are modified or supplemented. The State shall keep EPA apprised of any proposed modifications to its basic statutory or regulatory authority or procedures.

(1) If the Administrator determines pursuant to § 70.10 of this part that a State is not adequately administering the requirements of this part, or that the State's permit program is inadequate in any other way, the State shall revise the program or its means of implementation to correct the inadequacy. The program shall be revised within 180 days, or such other period as the Administrator may specify, following notification by the Administrator, or within 2 years if the State demonstrates that additional legal authority is necessary to make the program revision.

(2) Revision of a State program shall be accomplished as follows:

(i) The State shall submit a modified program description, Attorney General's statement, or such other documents as EPA determines to be necessary.

(ii) After EPA receives a proposed program revision, it will publish in the FEDERAL REGISTER a public notice summarizing the proposed change and provide a public comment period of at least 30 days.

(iii) The Administrator shall approve or disapprove program revisions based on the requirements of this part and of the Act.

(iv) A program revision shall become effective upon the approval of the Administrator. Notice of approval of any substantial revision shall be published in the FEDERAL REGISTER. Notice of approval of nonsubstantial program revisions may be given by a letter from the

Administrator to the Governor or a designee.

(v) The Governor of any State with an approved part 70 program shall notify EPA whenever the Governor proposes to transfer all or part of the program to any other agency, and shall identify any new division of responsibilities among the agencies involved. The new agency is not authorized to administer the program until the revision has been approved by the Administrator under this paragraph.

(3) Whenever the Administrator has reason to believe that circumstances have changed with respect to a State program, he may request, and the State shall provide, a supplemental Attorney General's statement, program description, or such other documents or information as he determines are necessary.

(j) *Sharing of information.* (1) Any information obtained or used in the administration of a State program shall be available to EPA upon request without restriction and in a form specified by the Administrator, including computer-readable files to the extent practicable. If the information has been submitted to the State under a claim of confidentiality, the State may require the source to submit this information to the Administrator directly. Where the State submits information to the Administrator under a claim of confidentiality, the State shall submit that claim to EPA when providing information to EPA under this section. Any information obtained from a State or part 70 source accompanied by a claim of confidentiality will be treated in accordance with the regulations in part 2 of this chapter.

(2) The EPA will furnish to States with approved programs the information in its files that the State needs to implement its approved program. Any such information submitted to EPA under a claim of confidentiality will be subject to the regulations in part 2 of this chapter.

(k) *Administration and enforcement.* Any State that fails to adopt a complete, approvable part 70 program, or that EPA determines is not adequately

administering or enforcing such program shall be subject to certain Federal sanctions as set forth in § 70.10 of this part.

[57 FR 32295, July 21, 1992, as amended at 61 FR 31448, June 20, 1996]

EFFECTIVE DATE NOTE: At 61 FR 31448, June 20, 1996, in § 70.4, paragraphs (d)(3) introductory text and (d)(3)(ii) were revised, effective July 22, 1996. For the convenience of the user, the superseded text is set forth as follows.

§ 70.4 State program submittals and transition.

\* \* \* \* \*

(d) \* \* \*

(3) The EPA will grant interim approval to any program if it meets each of the following minimum requirements:

\* \* \* \* \*

(ii) *Applicable requirements.* The program must provide for adequate authority to issue permits that assure compliance with the requirements of paragraph (c)(1) of this section for those major sources covered by the program.

\* \* \* \* \*

§ 70.5 Permit applications.

(a) *Duty to apply.* For each part 70 source, the owner or operator shall submit a timely and complete permit application in accordance with this section.

(1) *Timely application.* (i) A timely application for a source applying for a part 70 permit for the first time is one that is submitted within 12 months after the source becomes subject to the permit program or on or before such earlier date as the permitting authority may establish.

(ii) Part 70 sources required to meet the requirements under section 112(g) of the Act, or to have a permit under the preconstruction review program approved into the applicable implementation plan under part C or D of title I of the Act, shall file a complete application to obtain the part 70 permit or permit revision within 12 months after commencing operation or on or before such earlier date as the permitting authority may establish. Where an existing part 70 permit would prohibit such

construction or change in operation, the source must obtain a permit revision before commencing operation.

(iii) For purposes of permit renewal, a timely application is one that is submitted at least 6 months prior to the date of permit expiration, or such other longer time as may be approved by the Administrator that ensures that the term of the permit will not expire before the permit is renewed. In no event shall this time be greater than 18 months.

(iv) Applications for initial phase II acid rain permits shall be submitted to the permitting authority by January 1, 1996 for sulfur dioxide, and by January 1, 1998 for nitrogen oxides.

(2) *Complete application.* The program shall provide criteria and procedures for determining in a timely fashion when applications are complete. To be deemed complete, an application must provide all information required pursuant to paragraph (c) of this section, except that applications for permit revision need supply such information only if it is related to the proposed change. Information required under paragraph (c) of this section must be sufficient to evaluate the subject source and its application and to determine all applicable requirements. The program shall require that a responsible official certify the submitted information consistent with paragraph (d) of this section. Unless the permitting authority determines that an application is not complete within 60 days of receipt of the application, such application shall be deemed to be complete, except as otherwise provided in § 70.7(a)(4) of this part. If, while processing an application that has been determined or deemed to be complete, the permitting authority determines that additional information is necessary to evaluate or take final action on that application, it may request such information in writing and set a reasonable deadline for a response. The source's ability to operate without a permit, as set forth in § 70.7(b) of this part, shall be in effect from the date the application is determined or deemed to be complete until the final permit is issued, provided that the applicant submits any requested additional information by the

deadline specified by the permitting authority.

(3) *Confidential information.* In the case where a source has submitted information to the State under a claim of confidentiality, the permitting authority may also require the source to submit a copy of such information directly to the Administrator.

(b) *Duty to supplement or correct application.* Any applicant who fails to submit any relevant facts or who has submitted incorrect information in a permit application shall, upon becoming aware of such failure or incorrect submittal, promptly submit such supplementary facts or corrected information. In addition, an applicant shall provide additional information as necessary to address any requirements that become applicable to the source after the date it filed a complete application but prior to release of a draft permit.

(c) *Standard application form and required information.* The State program under this part shall provide for a standard application form or forms. Information as described below for each emissions unit at a part 70 source shall be included in the application. The Administrator may approve as part of a State program a list of insignificant activities and emissions levels which need not be included in permit applications. However, for insignificant activities which are exempted because of size or production rate, a list of such insignificant activities must be included in the application. An application may not omit information needed to determine the applicability of, or to impose, any applicable requirement, or to evaluate the fee amount required under the schedule approved pursuant to § 70.9 of this part. The permitting authority may use discretion in developing application forms that best meet program needs and administrative efficiency. The forms and attachments chosen, however, shall include the elements specified below:

(1) Identifying information, including company name and address (or plant name and address if different from the company name), owner's name and agent, and telephone number and names of plant site manager/contact.

(2) A description of the source's processes and products (by Standard Industrial Classification Code) including any associated with alternate scenario identified by the source.

(3) The following emission-related information:

(i) All emissions of pollutants for which the source is major, and all emissions of regulated air pollutants. A permit application shall describe all emissions of regulated air pollutants emitted from any emissions unit, except where such units are exempted under this paragraph (c) of this section. The permitting authority shall require additional information related to the emissions of air pollutants sufficient to verify which requirements are applicable to the source, and other information necessary to collect any permit fees owed under the fee schedule approved pursuant to § 70.9(b) of this part.

(ii) Identification and description of all points of emissions described in paragraph (c)(3)(i) of this section in sufficient detail to establish the basis for fees and applicability of requirements of the Act.

(iii) Emissions rate in tpy and in such terms as are necessary to establish compliance consistent with the applicable standard reference test method.

(iv) The following information to the extent it is needed to determine or regulate emissions: Fuels, fuel use, raw materials, production rates, and operating schedules.

(v) Identification and description of air pollution control equipment and compliance monitoring devices or activities.

(vi) Limitations on source operation affecting emissions or any work practice standards, where applicable, for all regulated pollutants at the part 70 source.

(vii) Other information required by any applicable requirement (including information related to stack height limitations developed pursuant to section 123 of the Act).

(viii) Calculations on which the information in paragraphs (c)(3) (i) through (vii) of this section is based.

(4) The following air pollution control requirements:

(i) Citation and description of all applicable requirements, and

(ii) Description of or reference to any applicable test method for determining compliance with each applicable requirement.

(5) Other specific information that may be necessary to implement and enforce other applicable requirements of the Act or of this part or to determine the applicability of such requirements.

(6) An explanation of any proposed exemptions from otherwise applicable requirements.

(7) Additional information as determined to be necessary by the permitting authority to define alternative operating scenarios identified by the source pursuant to §70.6(a)(9) of this part or to define permit terms and conditions implementing §70.4 (b) (12) or §70.6 (a) (10) of this part.

(8) A compliance plan for all part 70 sources that contains all the following:

(i) A description of the compliance status of the source with respect to all applicable requirements.

(ii) A description as follows:

(A) For applicable requirements with which the source is in compliance, a statement that the source will continue to comply with such requirements.

(B) For applicable requirements that will become effective during the permit term, a statement that the source will meet such requirements on a timely basis.

(C) For requirements for which the source is not in compliance at the time or permit issuance, a narrative description of how the source will achieve compliance with such requirements.

(iii) A compliance schedule as follows:

(A) For applicable requirements with which the source is in compliance, a statement that the source will continue to comply with such requirements.

(B) For applicable requirements that will become effective during the permit term, a statement that the source will meet such requirements on a timely basis. A statement that the source will meet in a timely manner applicable requirements that become effective during the permit term shall satisfy this provision, unless a more detailed

schedule is expressly required by the applicable requirement.

(C) A schedule of compliance for sources that are not in compliance with all applicable requirements at the time of permit issuance. Such a schedule shall include a schedule of remedial measures, including an enforceable sequence of actions with milestones, leading to compliance with any applicable requirements for which the source will be in noncompliance at the time of permit issuance. This compliance schedule shall resemble and be at least as stringent as that contained in any judicial consent decree or administrative order to which the source is subject. Any such schedule of compliance shall be supplemental to, and shall not sanction noncompliance with, the applicable requirements on which it is based.

(iv) A schedule for submission of certified progress reports no less frequently than every 6 months for sources required to have a schedule of compliance to remedy a violation.

(v) The compliance plan content requirements specified in this paragraph shall apply and be included in the acid rain portion of a compliance plan for an affected source, except as specifically superseded by regulations promulgated under title IV of the Act with regard to the schedule and method(s) the source will use to achieve compliance with the acid rain emissions limitations.

(9) Requirements for compliance certification, including the following:

(i) A certification of compliance with all applicable requirements by a responsible official consistent with paragraph (d) of this section and section 114(a)(3) of the Act;

(ii) A statement of methods used for determining compliance, including a description of monitoring, record-keeping, and reporting requirements and test methods;

(iii) A schedule for submission of compliance certifications during the permit term, to be submitted no less frequently than annually, or more frequently if specified by the underlying applicable requirement or by the permitting authority; and

(iv) A statement indicating the source's compliance status with any

applicable enhanced monitoring and compliance certification requirements of the Act.

(10) The use of nationally-standardized forms for acid rain portions of permit applications and compliance plans, as required by regulations promulgated under title IV of the Act.

(d) Any application form, report, or compliance certification submitted pursuant to these regulations shall contain certification by a responsible official of truth, accuracy, and completeness. This certification and any other certification required under this part shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.

**§ 70.6 Permit content.**

(a) *Standard permit requirements.* Each permit issued under this part shall include the following elements:

(1) Emission limitations and standards, including those operational requirements and limitations that assure compliance with all applicable requirements at the time of permit issuance.

(i) The permit shall specify and reference the origin of and authority for each term or condition, and identify any difference in form as compared to the applicable requirement upon which the term or condition is based.

(ii) The permit shall state that, where an applicable requirement of the Act is more stringent than an applicable requirement of regulations promulgated under title IV of the Act, both provisions shall be incorporated into the permit and shall be enforceable by the Administrator.

(iii) If an applicable implementation plan allows a determination of an alternative emission limit at a part 70 source, equivalent to that contained in the plan, to be made in the permit issuance, renewal, or significant modification process, and the State elects to use such process, any permit containing such equivalency determination shall contain provisions to ensure that any resulting emissions limit has been demonstrated to be quantifiable, accountable, enforceable, and based on replicable procedures.

(2) *Permit duration.* The permitting authority shall issue permits for a fixed term of 5 years in the case of affected sources, and for a term not to exceed 5 years in the case of all other sources. Notwithstanding this requirement, the permitting authority shall issue permits for solid waste incineration units combusting municipal waste subject to standards under section 129(e) of the Act for a period not to exceed 12 years and shall review such permits at least every 5 years.

(3) *Monitoring and related record-keeping and reporting requirements.* (i) Each permit shall contain the following requirements with respect to monitoring:

(A) All emissions monitoring and analysis procedures or test methods required under the applicable requirements, including any procedures and methods promulgated pursuant to sections 114(a)(3) or 504(b) of the Act;

(B) Where the applicable requirement does not require periodic testing or instrumental or noninstrumental monitoring (which may consist of recordkeeping designed to serve as monitoring), periodic monitoring sufficient to yield reliable data from the relevant time period that are representative of the source's compliance with the permit, as reported pursuant to paragraph (a)(3)(iii) of this section. Such monitoring requirements shall assure use of terms, test methods, units, averaging periods, and other statistical conventions consistent with the applicable requirement. Recordkeeping provisions may be sufficient to meet the requirements of this paragraph (a)(3)(i)(B) of this section; and

(C) As necessary, requirements concerning the use, maintenance, and, where appropriate, installation of monitoring equipment or methods.

(ii) With respect to recordkeeping, the permit shall incorporate all applicable recordkeeping requirements and require, where applicable, the following:

(A) Records of required monitoring information that include the following:

(1) The date, place as defined in the permit, and time of sampling or measurements;

(2) The date(s) analyses were performed;

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(3) The company or entity that performed the analyses;

(4) The analytical techniques or methods used;

(5) The results of such analyses; and

(6) The operating conditions as existing at the time of sampling or measurement;

(B) Retention of records of all required monitoring data and support information for a period of at least 5 years from the date of the monitoring sample, measurement, report, or application. Support information includes all calibration and maintenance records and all original strip-chart recordings for continuous monitoring instrumentation, and copies of all reports required by the permit.

(iii) With respect to reporting, the permit shall incorporate all applicable reporting requirements and require the following:

(A) Submittal of reports of any required monitoring at least every 6 months. All instances of deviations from permit requirements must be clearly identified in such reports. All required reports must be certified by a responsible official consistent with § 70.5(d) of this part.

(B) Prompt reporting of deviations from permit requirements, including those attributable to upset conditions as defined in the permit, the probable cause of such deviations, and any corrective actions or preventive measures taken. The permitting authority shall define "prompt" in relation to the degree and type of deviation likely to occur and the applicable requirements.

(4) A permit condition prohibiting emissions exceeding any allowances that the source lawfully holds under title IV of the Act or the regulations promulgated thereunder.

(i) No permit revision shall be required for increases in emissions that are authorized by allowances acquired pursuant to the acid rain program, provided that such increases do not require a permit revision under any other applicable requirement.

(ii) No limit shall be placed on the number of allowances held by the source. The source may not, however, use allowances as a defense to non-compliance with any other applicable requirement.

(iii) Any such allowance shall be accounted for according to the procedures established in regulations promulgated under title IV of the Act.

(5) A severability clause to ensure the continued validity of the various permit requirements in the event of a challenge to any portions of the permit.

(6) Provisions stating the following:

(i) The permittee must comply with all conditions of the part 70 permit. Any permit noncompliance constitutes a violation of the Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application.

(ii) Need to halt or reduce activity not a defense. It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

(iii) The permit may be modified, revoked, reopened, and reissued, or terminated for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or of a notification of planned changes or anticipated noncompliance does not stay any permit condition.

(iv) The permit does not convey any property rights of any sort, or any exclusive privilege.

(v) The permittee shall furnish to the permitting authority, within a reasonable time, any information that the permitting authority may request in writing to determine whether cause exists for modifying, revoking and reissuing, or terminating the permit or to determine compliance with the permit. Upon request, the permittee shall also furnish to the permitting authority copies of records required to be kept by the permit or, for information claimed to be confidential, the permittee may furnish such records directly to the Administrator along with a claim of confidentiality.

(7) A provision to ensure that a part 70 source pays fees to the permitting authority consistent with the fee schedule approved pursuant to § 70.9 of this part.

(8) *Emissions trading.* A provision stating that no permit revision shall be required, under any approved economic incentives, marketable permits, emissions trading and other similar programs or processes for changes that are provided for in the permit.

(9) Terms and conditions for reasonably anticipated operating scenarios identified by the source in its application as approved by the permitting authority. Such terms and conditions:

(i) Shall require the source, contemporaneously with making a change from one operating scenario to another, to record in a log at the permitted facility a record of the scenario under which it is operating;

(ii) May extend the permit shield described in paragraph (f) of this section to all terms and conditions under each such operating scenario; and

(iii) Must ensure that the terms and conditions of each such alternative scenario meet all applicable requirements and the requirements of this part.

(10) Terms and conditions, if the permit applicant requests them, for the trading of emissions increases and decreases in the permitted facility, to the extent that the applicable requirements provide for trading such increases and decreases without a case-by-case approval of each emissions trade. Such terms and conditions:

(i) Shall include all terms required under paragraphs (a) and (c) of this section to determine compliance;

(ii) May extend the permit shield described in paragraph (f) of this section to all terms and conditions that allow such increases and decreases in emissions; and

(iii) Must meet all applicable requirements and requirements of this part.

(b) *Federally-enforceable requirements.*

(1) All terms and conditions in a part 70 permit, including any provisions designed to limit a source's potential to emit, are enforceable by the Administrator and citizens under the Act.

(2) Notwithstanding paragraph (b)(1) of this section, the permitting authority shall specifically designate as not being federally enforceable under the Act any terms and conditions included in the permit that are not required under the Act or under any of its applicable requirements. Terms and condi-

tions so designated are not subject to the requirements of §§70.7, 70.8, or of this part, other than those contained in this paragraph (b) of this section.

(c) *Compliance requirements.* All part 70 permits shall contain the following elements with respect to compliance:

(1) Consistent with paragraph (a)(3) of this section, compliance certification, testing, monitoring, reporting, and recordkeeping requirements sufficient to assure compliance with the terms and conditions of the permit. Any document (including reports) required by a part 70 permit shall contain a certification by a responsible official that meets the requirements of §70.5(d) for this part.

(2) Inspection and entry requirements that require that, upon presentation of credentials and other documents as may be required by law, the permittee shall allow the permitting authority or an authorized representative to perform the following:

(i) Enter upon the permittee's premises where a part 70 source is located or emissions-related activity is conducted, or where records must be kept under the conditions of the permit;

(ii) Have access to and copy, at reasonable times, any records that must be kept under the conditions of the permit;

(iii) Inspect at reasonable times any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under the permit; and

(iv) As authorized by the Act, sample or monitor at reasonable times substances or parameters for the purpose of assuring compliance with the permit or applicable requirements.

(3) A schedule of compliance consistent with §70.5(c)(8) of this part.

(4) Progress reports consistent with an applicable schedule of compliance and §70.5(c)(8) of this part to be submitted at least semiannually, or at a more frequent period if specified in the applicable requirement or by the permitting authority. Such progress reports shall contain the following:

(i) Dates for achieving the activities, milestones, or compliance required in the schedule of compliance, and dates when such activities, milestones or compliance were achieved; and

(ii) An explanation of why any dates in the schedule of compliance were not or will not be met, and any preventive or corrective measures adopted.

(5) Requirements for compliance certification with terms and conditions contained in the permit, including emission limitations, standards, or work practices. Permits shall include each of the following:

(i) The frequency (not less than annually or such more frequent periods as specified in the applicable requirement or by the permitting authority) of submissions of compliance certifications;

(ii) In accordance with § 70.6(a)(3) of this part, a means for monitoring the compliance of the source with its emissions limitations, standards, and work practices;

(iii) A requirement that the compliance certification include the following:

(A) The identification of each term or condition of the permit that is the basis of the certification;

(B) The compliance status;

(C) Whether compliance was continuous or intermittent;

(D) The method(s) used for determining the compliance status of the source, currently and over the reporting period consistent with paragraph (a)(3) of this section; and

(E) Such other facts as the permitting authority may require to determine the compliance status of the source;

(iv) A requirement that all compliance certifications be submitted to the Administrator as well as to the permitting authority; and

(v) Such additional requirements as may be specified pursuant to sections 114(a)(3) and 504(b) of the Act.

(6) Such other provisions as the permitting authority may require.

(d) *General permits.* (1) The permitting authority may, after notice and opportunity for public participation provided under § 70.7(h) of this part, issue a general permit covering numerous similar sources. Any general permit shall comply with all requirements applicable to other part 70 permits and shall identify criteria by which sources may qualify for the general permit. To sources that qualify, the permitting authority shall grant the conditions and terms of the

general permit. Notwithstanding the shield provisions of paragraph (f) of this section, the source shall be subject to enforcement action for operation without a part 70 permit if the source is later determined not to qualify for the conditions and terms of the general permit. General permits shall not be authorized for affected sources under the acid rain program unless otherwise provided in regulations promulgated under title IV of the Act.

(2) Part 70 sources that would qualify for a general permit must apply to the permitting authority for coverage under the terms of the general permit or must apply for a part 70 permit consistent with § 70.5 of this part. The permitting authority may, in the general permit, provide for applications which deviate from the requirements of § 70.5 of this part, provided that such applications meet the requirements of title V of the Act, and include all information necessary to determine qualification for, and to assure compliance with, the general permit. Without repeating the public participation procedures required under § 70.7(h) of this part, the permitting authority may grant a source's request for authorization to operate under a general permit, but such a grant shall not be a final permit action for purposes of judicial review.

(e) *Temporary sources.* The permitting authority may issue a single permit authorizing emissions from similar operations by the same source owner or operator at multiple temporary locations. The operation must be temporary and involve at least one change of location during the term of the permit. No affected source shall be permitted as a temporary source. Permits for temporary sources shall include the following:

(1) Conditions that will assure compliance with all applicable requirements at all authorized locations;

(2) Requirements that the owner or operator notify the permitting authority at least 10 days in advance of each change in location; and

(3) Conditions that assure compliance with all other provisions of this section.

(f) *Permit shield.* (1) Except as provided in this part, the permitting authority may expressly include in a part 70 permit a provision stating that compliance with the conditions of the permit shall be deemed compliance with any applicable requirements as of the date of permit issuance, provided that:

(i) Such applicable requirements are included and are specifically identified in the permit; or

(ii) The permitting authority, in acting on the permit application or revision, determines in writing that other requirements specifically identified are not applicable to the source, and the permit includes the determination or a concise summary thereof.

(2) A part 70 permit that does not expressly state that a permit shield exists shall be presumed not to provide such a shield.

(3) Nothing in this paragraph or in any part 70 permit shall alter or affect the following:

(i) The provisions of section 303 of the Act (emergency orders), including the authority of the Administrator under that section;

(ii) The liability of an owner or operator of a source for any violation of applicable requirements prior to or at the time of permit issuance;

(iii) The applicable requirements of the acid rain program, consistent with section 408(a) of the Act; or

(iv) The ability of EPA to obtain information from a source pursuant to section 114 of the Act.

(g) *Emergency provision—(1) Definition.* An “emergency” means any situation arising from sudden and reasonably unforeseeable events beyond the control of the source, including acts of God, which situation requires immediate corrective action to restore normal operation, and that causes the source to exceed a technology-based emission limitation under the permit, due to unavoidable increases in emissions attributable to the emergency. An emergency shall not include noncompliance to the extent caused by improperly designed equipment, lack of preventative maintenance, careless or improper operation, or operator error.

(2) *Effect of an emergency.* An emergency constitutes an affirmative defense to an action brought for non-

compliance with such technology-based emission limitations if the conditions of paragraph (g)(3) of this section are met.

(3) The affirmative defense of emergency shall be demonstrated through properly signed, contemporaneous operating logs, or other relevant evidence that:

(i) An emergency occurred and that the permittee can identify the cause(s) of the emergency;

(ii) The permitted facility was at the time being properly operated;

(iii) During the period of the emergency the permittee took all reasonable steps to minimize levels of emissions that exceeded the emission standards, or other requirements in the permit; and

(iv) The permittee submitted notice of the emergency to the permitting authority within 2 working days of the time when emission limitations were exceeded due to the emergency. This notice fulfills the requirement of paragraph (a)(3)(iii)(B) of this section. This notice must contain a description of the emergency, any steps taken to mitigate emissions, and corrective actions taken.

(4) In any enforcement proceeding, the permittee seeking to establish the occurrence of an emergency has the burden of proof.

(5) This provision is in addition to any emergency or upset provision contained in any applicable requirement.

**§ 70.7 Permit issuance, renewal, reopenings, and revisions.**

(a) *Action on application.* (1) A permit, permit modification, or renewal may be issued only if all of the following condition have been met:

(i) The permitting authority has received a complete application for a permit, permit modification, or permit renewal, except that a complete application need not be received before issuance of a general permit under § 70.6(d) of this part;

(ii) Except for modifications qualifying for minor permit modification procedures under paragraphs (e) (2) and (3) of this section, the permitting authority has complied with the requirements for public participation under paragraph (h) of this section;

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(iii) The permitting authority has complied with the requirements for notifying and responding to affected States under § 70.8(b) of this part;

(iv) The conditions of the permit provide for compliance with all applicable requirements and the requirements of this part; and

(v) The Administrator has received a copy of the proposed permit and any notices required under §§ 70.8(a) and 70.8(b) of this part, and has not objected to issuance of the permit under § 70.8(c) of this part within the time period specified therein.

(2) Except as provided under the initial transition plan provided for under § 70.4(b)(11) of this part or under regulations promulgated under title IV of title V of the Act for the permitting of affected sources under the acid rain program, the program shall provide that the permitting authority take final action on each permit application (including a request for permit modification or renewal) within 18 months, or such lesser time approved by the Administrator, after receiving a complete application.

(3) The program shall also contain reasonable procedures to ensure priority is given to taking action on applications for construction or modification under title I, parts C and D of the Act.

(4) The permitting authority shall promptly provide notice to the applicant of whether the application is complete. Unless the permitting authority requests additional information or otherwise notifies the applicant of incompleteness within 60 days of receipt of an application, the application shall be deemed complete. For modifications processed through minor permit modification procedures, such as those in paragraphs (e) (2) and (3) of this section, the State program need not require a completeness determination.

(5) The permitting authority shall provide a statement that sets forth the legal and factual basis for the draft permit conditions (including references to the applicable statutory or regulatory provisions). The permitting authority shall send this statement to EPA and to any other person who requests it.

(6) The submittal of a complete application shall not affect the requirement that any source have a preconstruction permit under title I of the Act.

(b) *Requirement for a permit.* Except as provided in the following sentence, § 70.4(b)(12)(i), and paragraphs (e) (2)(v) and (3)(v) of this section, no part 70 source may operate after the time that it is required to submit a timely and complete application under an approved permit program, except in compliance with a permit issued under a part 70 program. The program shall provide that, if a part 70 source submits a timely and complete application for permit issuance (including for renewal), the source's failure to have a part 70 permit is not a violation of this part until the permitting authority takes final action on the permit application, except as noted in this section. This protection shall cease to apply if, subsequent to the completeness determination made pursuant to paragraph (a)(4) of this section, and as required by § 70.5(a)(2) of this part, the applicant fails to submit by the deadline specified in writing by the permitting authority any additional information identified as being needed to process the application.

(c) *Permit renewal and expiration.* (1) The program shall provide that:

(i) Permits being renewed are subject to the same procedural requirements, including those for public participation, affected State and EPA review, that apply to initial permit issuance; and

(ii) Permit expiration terminates the source's right to operate unless a timely and complete renewal application has been submitted consistent with paragraph (b) of this section and § 70.5(a)(1)(iii) of this part.

(2) If the permitting authority fails to act in a timely way on a permit renewal, EPA may invoke its authority under section 505(e) of the Act to terminate or revoke and reissue the permit.

(d) *Administrative permit amendments.* (1) An "administrative permit amendment" is a permit revision that:

(i) Corrects typographical errors;

(ii) Identifies a change in the name, address, or phone number of any person identified in the permit, or provides a

similar minor administrative change at the source;

(iii) Requires more frequent monitoring or reporting by the permittee;

(iv) Allows for a change in ownership or operational control of a source where the permitting authority determines that no other change in the permit is necessary, provided that a written agreement containing a specific date for transfer of permit responsibility, coverage, and liability between the current and new permittee has been submitted to the permitting authority;

(v) Incorporates into the part 70 permit the requirements from preconstruction review permits authorized under an EPA-approved program, provided that such a program meets procedural requirements substantially equivalent to the requirements of §§ 70.7 and 70.8 of this part that would be applicable to the change if it were subject to review as a permit modification, and compliance requirements substantially equivalent to those contained in § 70.6 of this part; or

(vi) Incorporates any other type of change which the Administrator has determined as part of the approved part 70 program to be similar to those in paragraphs (d)(1) (i) through (iv) of this section.

(2) Administrative permit amendments for purposes of the acid rain portion of the permit shall be governed by regulations promulgated under title IV of the Act.

(3) *Administrative permit amendment procedures.* An administrative permit amendment may be made by the permitting authority consistent with the following:

(i) The permitting authority shall take no more than 60 days from receipt of a request for an administrative permit amendment to take final action on such request, and may incorporate such changes without providing notice to the public or affected States provided that it designates any such permit revisions as having been made pursuant to this paragraph.

(ii) The permitting authority shall submit a copy of the revised permit to the Administrator.

(iii) The source may implement the changes addressed in the request for an

administrative amendment immediately upon submittal of the request.

(4) The permitting authority may, upon taking final action granting a request for an administrative permit amendment, allow coverage by the permit shield in § 70.6(f) for administrative permit amendments made pursuant to paragraph (d)(1)(v) of this section which meet the relevant requirements of §§ 70.6, 70.7, and 70.8 for significant permit modifications.

(e) *Permit modification.* A permit modification is any revision to a part 70 permit that cannot be accomplished under the program's provisions for administrative permit amendments under paragraph (d) of this section. A permit modification for purposes of the acid rain portion of the permit shall be governed by regulations promulgated under title IV of the Act.

(1) *Program description.* The State shall provide adequate, streamlined, and reasonable procedures for expeditiously processing permit modifications. The State may meet this obligation by adopting the procedures set forth below or ones substantially equivalent. The State may also develop different procedures for different types of modifications depending on the significance and complexity of the requested modification, but EPA will not approve a part 70 program that has modification procedures that provide for less permitting authority, EPA, or affected State review or public participation than is provided for in this part.

(2) *Minor permit modification procedures—(i) Criteria.* (A) Minor permit modification procedures may be used only for those permit modifications that:

(1) Do not violate any applicable requirement;

(2) Do not involve significant changes to existing monitoring, reporting, or recordkeeping requirements in the permit;

(3) Do not require or change a case-by-case determination of an emission limitation or other standard, or a source-specific determination for temporary sources of ambient impacts, or a visibility or increment analysis;

(4) Do not seek to establish or change a permit term or condition for which there is no corresponding underlying

applicable requirement and that the source has assumed to avoid an applicable requirement to which the source would otherwise be subject. Such terms and conditions include:

(A) A federally enforceable emissions cap assumed to avoid classification as a modification under any provision of title I; and

(B) An alternative emissions limit approved pursuant to regulations promulgated under section 112(i)(5) of the Act;

(5) Are not modifications under any provision of title I of the Act; and

(6) Are not required by the State program to be processed as a significant modification.

(B) Notwithstanding paragraphs (e)(2)(i)(A) and (e)(3)(i) of this section, minor permit modification procedures may be used for permit modifications involving the use of economic incentives, marketable permits, emissions trading, and other similar approaches, to the extent that such minor permit modification procedures are explicitly provided for in an applicable implementation plan or in applicable requirements promulgated by EPA.

(ii) *Application.* An application requesting the use of minor permit modification procedures shall meet the requirements of § 70.5(c) of this part and shall include the following:

(A) A description of the change, the emissions resulting from the change, and any new applicable requirements that will apply if the change occurs;

(B) The source's suggested draft permit;

(C) Certification by a responsible official, consistent with § 70.5(d), that the proposed modification meets the criteria for use of minor permit modification procedures and a request that such procedures be used; and

(D) Completed forms for the permitting authority to use to notify the Administrator and affected States as required under § 70.8.

(iii) *EPA and affected State notification.* Within 5 working days of receipt of a complete permit modification application, the permitting authority shall meet its obligation under § 70.8 (a)(1) and (b)(1) to notify the Administrator and affected States of the requested permit modification. The per-

mitting authority promptly shall send any notice required under § 70.8(b)(2) to the Administrator.

(iv) *Timetable for issuance.* The permitting authority may not issue a final permit modification until after EPA's 45-day review period or until EPA has notified the permitting authority that EPA will not object to issuance of the permit modification, whichever is first, although the permitting authority can approve the permit modification prior to that time. Within 90 days of the permitting authority's receipt of an application under minor permit modification procedures or 15 days after the end of the Administrator's 45-day review period under § 70.8(c), whichever is later, the permitting authority shall:

(A) Issue the permit modification as proposed;

(B) Deny the permit modification application;

(C) Determine that the requested modification does not meet the minor permit modification criteria and should be reviewed under the significant modification procedures; or

(D) Revise the draft permit modification and transmit to the Administrator the new proposed permit modification as required by § 70.8(a) of this part.

(v) *Source's ability to make change.* The State program may allow the source to make the change proposed in its minor permit modification application immediately after it files such application. After the source makes the change allowed by the preceding sentence, and until the permitting authority takes any of the actions specified in paragraphs (e)(2)(v) (A) through (C) of this section, the source must comply with both the applicable requirements governing the change and the proposed permit terms and conditions. During this time period, the source need not comply with the existing permit terms and conditions it seeks to modify. However, if the source fails to comply with its proposed permit terms and conditions during this time period, the existing permit terms and conditions it seeks to modify may be enforced against it.

(vi) *Permit shield.* The permit shield under § 70.6(f) of this part may not extend to minor permit modifications.

(3) *Group processing of minor permit modifications.* Consistent with this paragraph, the permitting authority may modify the procedure outlined in paragraph (e)(2) of this section to process groups of a source's applications for certain modifications eligible for minor permit modification processing.

(i) *Criteria.* Group processing of modifications may be used only for those permit modifications:

(A) That meet the criteria for minor permit modification procedures under paragraph (e)(2)(i)(A) of this section; and

(B) That collectively are below the threshold level approved by the Administrator as part of the approved program. Unless the State sets an alternative threshold consistent with the criteria set forth in paragraphs (e)(3)(i)(B) (1) and (2) of this section, this threshold shall be 10 percent of the emissions allowed by the permit for the emissions unit for which the change is requested, 20 percent of the applicable definition of major source in § 70.2 of this part, or 5 tons per year, whichever is least. In establishing any alternative threshold, the State shall consider:

(1) Whether group processing of amounts below the threshold levels reasonably alleviates severe administrative burdens that would be imposed by immediate permit modification review, and

(2) Whether individual processing of changes below the threshold levels would result in trivial environmental benefits.

(ii) *Application.* An application requesting the use of group processing procedures shall meet the requirements of § 70.5(c) of this part and shall include the following:

(A) A description of the change, the emissions resulting from the change, and any new applicable requirements that will apply if the change occurs.

(B) The source's suggested draft permit.

(C) Certification by a responsible official, consistent with § 70.5(d) of this part, that the proposed modification meets the criteria for use of group processing procedures and a request that such procedures be used.

(D) A list of the source's other pending applications awaiting group processing,

and a determination of whether the requested modification, aggregated with these other applications, equals or exceeds the threshold set under paragraph (e)(3)(i)(B) of this section.

(E) Certification, consistent with § 70.5(d) of this part, that the source has notified EPA of the proposed modification. Such notification need only contain a brief description of the requested modification.

(F) Completed forms for the permitting authority to use to notify the Administrator and affected States as required under § 70.8 of this part.

(iii) *EPA and affected State notification.* On a quarterly basis or within 5 business days of receipt of an application demonstrating that the aggregate of a source's pending applications equals or exceeds the threshold level set under paragraph (e)(3)(i)(B) of this section, whichever is earlier, the permitting authority promptly shall meet its obligations under §§ 70.8 (a)(1) and (b)(1) to notify the Administrator and affected States of the requested permit modifications. The permitting authority shall send any notice required under § 70.8(b)(2) of this part to the Administrator.

(iv) *Timetable for issuance.* The provisions of paragraph (e)(2)(iv) of this section shall apply to modifications eligible for group processing, except that the permitting authority shall take one of the actions specified in paragraphs (e)(2)(iv) (A) through (D) of this section within 180 days of receipt of the application or 15 days after the end of the Administrator's 45-day review period under § 70.8(c) of this part, whichever is later.

(v) *Source's ability to make change.* The provisions of paragraph (e)(2)(v) of this section shall apply to modifications eligible for group processing.

(vi) *Permit shield.* The provisions of paragraph (e)(2)(vi) of this section shall also apply to modifications eligible for group processing.

(4) *Significant modification procedures—(i) Criteria.* Significant modification procedures shall be used for applications requesting permit modifications that do not qualify as minor permit modifications or as administrative amendments. The State program shall

contain criteria for determining whether a change is significant. At a minimum, every significant change in existing monitoring permit terms or conditions and every relaxation of reporting or recordkeeping permit terms or conditions shall be considered significant. Nothing herein shall be construed to preclude the permittee from making changes consistent with this part that would render existing permit compliance terms and conditions irrelevant.

(ii) The State program shall provide that significant permit modifications shall meet all requirements of this part, including those for applications, public participation, review by affected States, and review by EPA, as they apply to permit issuance and permit renewal. The permitting authority shall design and implement this review process to complete review on the majority of significant permit modifications within 9 months after receipt of a complete application.

(f) *Reopening for cause.* (1) Each issued permit shall include provisions specifying the conditions under which the permit will be reopened prior to the expiration of the permit. A permit shall be reopened and revised under any of the following circumstances:

(i) Additional applicable requirements under the Act become applicable to a major part 70 source with a remaining permit term of 3 or more years. Such a reopening shall be completed not later than 18 months after promulgation of the applicable requirement. No such reopening is required if the effective date of the requirement is later than the date on which the permit is due to expire, unless the original permit or any of its terms and conditions has been extended pursuant to §70.4(b)(10) (i) or (ii) of this part.

(ii) Additional requirements (including excess emissions requirements) become applicable to an affected source under the acid rain program. Upon approval by the Administrator, excess emissions offset plans shall be deemed to be incorporated into the permit.

(iii) The permitting authority or EPA determines that the permit contains a material mistake or that inaccurate statements were made in establishing the emissions standards or

other terms or conditions of the permit.

(iv) The Administrator or the permitting authority determines that the permit must be revised or revoked to assure compliance with the applicable requirements.

(2) Proceedings to reopen and issue a permit shall follow the same procedures as apply to initial permit issuance and shall affect only those parts of the permit for which cause to reopen exists. Such reopening shall be made as expeditiously as practicable.

(3) Reopenings under paragraph (f)(1) of this section shall not be initiated before a notice of such intent is provided to the part 70 source by the permitting authority at least 30 days in advance of the date that the permit is to be reopened, except that the permitting authority may provide a shorter time period in the case of an emergency.

(g) *Reopenings for cause by EPA.* (1) If the Administrator finds that cause exists to terminate, modify, or revoke and reissue a permit pursuant to paragraph (f) of this section, the Administrator will notify the permitting authority and the permittee of such finding in writing.

(2) The permitting authority shall, within 90 days after receipt of such notification, forward to EPA a proposed determination of termination, modification, or revocation and reissuance, as appropriate. The Administrator may extend this 90-day period for an additional 90 days if he finds that a new or revised permit application is necessary or that the permitting authority must require the permittee to submit additional information.

(3) The Administrator will review the proposed determination from the permitting authority within 90 days of receipt.

(4) The permitting authority shall have 90 days from receipt of an EPA objection to resolve any objection that EPA makes and to terminate, modify, or revoke and reissue the permit in accordance with the Administrator's objection.

(5) If the permitting authority fails to submit a proposed determination pursuant to paragraph (g)(2) of this section or fails to resolve any objection

pursuant to paragraph (g)(4) of this section, the Administrator will terminate, modify, or revoke and reissue the permit after taking the following actions:

(i) Providing at least 30 days' notice to the permittee in writing of the reasons for any such action. This notice may be given during the procedures in paragraphs (g) (1) through (4) of this section.

(ii) Providing the permittee an opportunity for comment on the Administrator's proposed action and an opportunity for a hearing.

(h) *Public participation.* Except for modifications qualifying for minor permit modification procedures, all permit proceedings, including initial permit issuance, significant modifications, and renewals, shall provide adequate procedures for public notice including offering an opportunity for public comment and a hearing on the draft permit. These procedures shall include the following:

(1) Notice shall be given: by publication in a newspaper of general circulation in the area where the source is located or in a State publication designed to give general public notice; to persons on a mailing list developed by the permitting authority, including those who request in writing to be on the list; and by other means if necessary to assure adequate notice to the affected public;

(2) The notice shall identify the affected facility; the name and address of the permittee; the name and address of the permitting authority processing the permit; the activity or activities involved in the permit action; the emissions change involved in any permit modification; the name, address, and telephone number of a person from whom interested persons may obtain additional information, including copies of the permit draft, the application, all relevant supporting materials, including those set forth in § 70.4(b)(3)(viii) of this part, and all other materials available to the permitting authority that are relevant to the permit decision; a brief description of the comment procedures required by this part; and the time and place of any hearing that may be held, including a statement of procedures to request a

hearing (unless a hearing has already been scheduled);

(3) The permitting authority shall provide such notice and opportunity for participation by affected States as is provided for by § 70.8 of this part;

(4) *Timing.* The permitting authority shall provide at least 30 days for public comment and shall give notice of any public hearing at least 30 days in advance of the hearing.

(5) The permitting authority shall keep a record of the commenters and also of the issues raised during the public participation process so that the Administrator may fulfill his obligation under section 505(b)(2) of the Act to determine whether a citizen petition may be granted, and such records shall be available to the public.

**§ 70.8 Permit review by EPA and affected States.**

(a) *Transmission of information to the Administrator.* (1) The permit program shall require that the permitting authority provide to the Administrator a copy of each permit application (including any application for permit modification), each proposed permit, and each final part 70 permit. The applicant may be required by the permitting authority to provide a copy of the permit application (including the compliance plan) directly to the Administrator. Upon agreement with the Administrator, the permitting authority may submit to the Administrator a permit application summary form and any relevant portion of the permit application and compliance plan, in place of the complete permit application and compliance plan. To the extent practicable, the preceding information shall be provided in computer-readable format compatible with EPA's national database management system.

(2) The Administrator may waive the requirements of paragraphs (a)(1) and (b)(1) of this section for any category of sources (including any class, type, or size within such category) other than major sources according to the following:

(i) By regulation for a category of sources nationwide, or

(ii) At the time of approval of a State program for a category of sources covered by an individual permitting program.

(3) Each State permitting authority shall keep for 5 years such records and submit to the Administrator such information as the Administrator may reasonably require to ascertain whether the State program complies with the requirements of the Act or of this part.

(b) *Review by affected States.* (1) The permit program shall provide that the permitting authority give notice of each draft permit to any affected State on or before the time that the permitting authority provides this notice to the public under § 70.7(h) of this part, except to the extent § 70.7(e) (2) or (3) of this part requires the timing of the notice to be different.

(2) The permit program shall provide that the permitting authority, as part of the submittal of the proposed permit to the Administrator [or as soon as possible after the submittal for minor permit modification procedures allowed under § 70.7(e) (2) or (3) of this part], shall notify the Administrator and any affected State in writing of any refusal by the permitting authority to accept all recommendations for the proposed permit that the affected State submitted during the public or affected State review period. The notice shall include the permitting authority's reasons for not accepting any such recommendation. The permitting authority is not required to accept recommendations that are not based on applicable requirements or the requirements of this part.

(c) *EPA objection.* (1) The Administrator will object to the issuance of any proposed permit determined by the Administrator not to be in compliance with applicable requirements or requirements under this part. No permit for which an application must be transmitted to the Administrator under paragraph (a) of this section shall be issued if the Administrator objects to its issuance in writing within 45 days of receipt of the proposed permit and all necessary supporting information.

(2) Any EPA objection under paragraph (c)(1) of this section shall include a statement of the Administrator's reasons for objection and a description of

the terms and conditions that the permit must include to respond to the objections. The Administrator will provide the permit applicant a copy of the objection.

(3) Failure of the permitting authority to do any of the following also shall constitute grounds for an objection:

(i) Comply with paragraphs (a) or (b) of this section;

(ii) Submit any information necessary to review adequately the proposed permit; or

(iii) Process the permit under the procedures approved to meet § 70.7(h) of this part except for minor permit modifications.

(4) If the permitting authority fails, within 90 days after the date of an objection under paragraph (c)(1) of this section, to revise and submit a proposed permit in response to the objection, the Administrator will issue or deny the permit in accordance with the requirements of the Federal program promulgated under title V of this Act.

(d) *Public petitions to the Administrator.* The program shall provide that, if the Administrator does not object in writing under paragraph (c) of this section, any person may petition the Administrator within 60 days after the expiration of the Administrator's 45-day review period to make such objection. Any such petition shall be based only on objections to the permit that were raised with reasonable specificity during the public comment period provided for in § 70.7(h) of this part, unless the petitioner demonstrates that it was impracticable to raise such objections within such period, or unless the grounds for such objection arose after such period. If the Administrator objects to the permit as a result of a petition filed under this paragraph, the permitting authority shall not issue the permit until EPA's objection has been resolved, except that a petition for review does not stay the effectiveness of a permit or its requirements if the permit was issued after the end of the 45-day review period and prior to an EPA objection. If the permitting authority has issued a permit prior to receipt of an EPA objection under this paragraph, the Administrator will modify, terminate, or revoke such permit, and shall do so consistent with the

procedures in § 70.7(g) (4) or (5) (i) and (ii) of this part except in unusual circumstances, and the permitting authority may thereafter issue only a revised permit that satisfies EPA's objection. In any case, the source will not be in violation of the requirement to have submitted a timely and complete application.

(e) *Prohibition on default issuance.* Consistent with § 70.4(b)(3)(ix) of this part, for the purposes of Federal law and title V of the Act, no State program may provide that a part 70 permit (including a permit renewal or modification) will issue until affected States and EPA have had an opportunity to review the proposed permit as required under this section. When the program is submitted for EPA review, the State Attorney General or independent legal counsel shall certify that no applicable provision of State law requires that a part 70 permit or renewal be issued after a certain time if the permitting authority has failed to take action on the application (or includes any other similar provision providing for default issuance of a permit), unless EPA has waived such review for EPA and affected States.

**§ 70.9 Fee determination and certification.**

(a) *Fee Requirement.* The State program shall require that the owners or operators of part 70 sources pay annual fees, or the equivalent over some other period, that are sufficient to cover the permit program costs and shall ensure that any fee required by this section will be used solely for permit program costs.

(b) *Fee schedule adequacy.* (1) The State program shall establish a fee schedule that results in the collection and retention of revenues sufficient to cover the permit program costs. These costs include, but are not limited to, the costs of the following activities as they relate to the operating permit program for stationary sources:

(i) Preparing generally applicable regulations or guidance regarding the permit program or its implementation or enforcement;

(ii) Reviewing and acting on any application for a permit, permit revision, or permit renewal, including the devel-

opment of an applicable requirement as part of the processing of a permit, or permit revision or renewal;

(iii) General administrative costs of running the permit program, including the supporting and tracking of permit applications, compliance certification, and related data entry;

(iv) Implementing and enforcing the terms of any part 70 permit (not including any court costs or other costs associated with an enforcement action), including adequate resources to determine which sources are subject to the program;

(v) Emissions and ambient monitoring;

(vi) Modeling, analyses, or demonstrations;

(vii) Preparing inventories and tracking emissions; and

(viii) Providing direct and indirect support to sources under the Small Business Stationary Source Technical and Environmental Compliance Assistance Program contained in section 507 of the Act in determining and meeting their obligations under this part.

(2)(i) The Administrator will presume that the fee schedule meets the requirements of paragraph (b)(1) of this section if it would result in the collection and retention of an amount not less than \$25 per year [as adjusted pursuant to the criteria set forth in paragraph (b)(2)(iv) of this section] times the total tons of the actual emissions of each regulated pollutant (for presumptive fee calculation) emitted from part 70 sources.

(ii) The State may exclude from such calculation:

(A) The actual emissions of sources for which no fee is required under paragraph (b)(4) of this section;

(B) The amount of a part 70 source's actual emissions of each regulated pollutant (for presumptive fee calculation) that the source emits in excess of four thousand (4,000) tpy;

(C) A part 70 source's actual emissions of any regulated pollutant (for presumptive fee calculation), the emissions of which are already included in the minimum fees calculation; or

(D) The insignificant quantities of actual emissions not required in a permit application pursuant to § 70.5(c).

(iii) "Actual emissions" means the actual rate of emissions in tons per year of any regulated pollutant (for presumptive fee calculation) emitted from a part 70 source over the preceding calendar year or any other period determined by the permitting authority to be representative of normal source operation and consistent with the fee schedule approved pursuant to this section. Actual emissions shall be calculated using the unit's actual operating hours, production rates, and in-place control equipment, types of materials processed, stored, or combusted during the preceding calendar year or such other time period established by the permitting authority pursuant to the preceding sentence.

(iv) The program shall provide that the \$25 per ton per year used to calculate the presumptive minimum amount to be collected by the fee schedule, as described in paragraph (b)(2)(i) of this section, shall be increased each year by the percentage, if any, by which the Consumer Price Index for the most recent calendar year ending before the beginning of such year exceeds the Consumer Price Index for the calendar year 1989.

(A) The Consumer Price Index for any calendar year is the average of the Consumer Price Index for all-urban consumers published by the Department of Labor, as of the close of the 12-month period ending on August 31 of each calendar year.

(B) The revision of the Consumer Price Index which is most consistent with the Consumer Price Index for the calendar year 1989 shall be used.

(3) The State program's fee schedule may include emissions fees, application fees, service-based fees or other types of fees, or any combination thereof, to meet the requirements of paragraph (b)(1) or (b)(2) of this section. Nothing in the provisions of this section shall require a permitting authority to calculate fees on any particular basis or in the same manner for all part 70 sources, all classes or categories of part 70 sources, or all regulated air pollutants, provided that the permitting authority collects a total amount of fees sufficient to meet the program support requirements of paragraph (b)(1) of this section.

(4) Notwithstanding any other provision of this section, during the years 1995 through 1999 inclusive, no fee for purposes of title V shall be required to be paid with respect to emissions from any affected unit under section 404 of the Act.

(5) The State shall provide a detailed accounting that its fee schedule meets the requirements of paragraph (b)(1) of this section if:

(i) The State sets a fee schedule that would result in the collection and retention of an amount less than that presumed to be adequate under paragraph (b)(2) of this section; or

(ii) The Administrator determines, based on comments rebutting the presumption in paragraph (b)(2) of this section or on his own initiative, that there are serious questions regarding whether the fee schedule is sufficient to cover the permit program costs.

(c) *Fee demonstration.* The permitting authority shall provide a demonstration that the fee schedule selected will result in the collection and retention of fees in an amount sufficient to meet the requirements of this section.

(d) *Use of Required Fee Revenue.* The Administrator will not approve a demonstration as meeting the requirements of this section, unless it contains an initial accounting (and periodic updates as required by the Administrator) of how required fee revenues are used solely to cover the costs of meeting the various functions of the permitting program.

#### **§70.10 Federal oversight and sanctions.**

(a) *Failure to submit an approvable program.* (1) If a State fails to submit a fully-approvable whole part 70 program, or a required revision thereto, in conformance with the provisions of §70.4, or if an interim approval expires and the Administrator has not approved a whole part 70 program:

(i) At any time the Administrator may apply any one of the sanctions specified in section 179(b) of the Act; and

(ii) Eighteen months after the date required for submittal or the date of disapproval by the Administrator, the Administrator will apply such sanctions in the same manner and with the

same conditions as are applicable in the case of a determination, disapproval, or finding under section 179(a) of the Act.

(2) If full approval of a whole part 70 program has not taken place within 2 years after the date required for such submission, the Administrator will promulgate, administer, and enforce a whole program or a partial program as appropriate for such State.

(b) *State failure to administer or enforce.* Any State program approved by the Administrator shall at all times be conducted in accordance with the requirements of this part and of any agreement between the State and the Administrator concerning operation of the program.

(1) Whenever the Administrator makes a determination that a permitting authority is not adequately administering or enforcing a part 70 program, or any portion thereof, the Administrator will notify the permitting authority of the determination and the reasons therefore. The Administrator will publish such notice in the FEDERAL REGISTER.

(2) If, 90 days after issuing the notice under paragraph (c)(1) of this section, the permitting authority fails to take significant action to assure adequate administration and enforcement of the program, the Administrator may take one or more of the following actions:

(i) Withdraw approval of the program or portion thereof using procedures consistent with § 70.4(e) of this part;

(ii) Apply any of the sanctions specified in section 179(b) of the Act;

(iii) Promulgate, administer, or enforce a Federal program under title V of the Act.

(3) Whenever the Administrator has made the finding and issued the notice under paragraph (c)(1) of this section, the Administrator will apply the sanctions under section 179(b) of the Act 18 months after that notice. These sanctions will be applied in the same manner and subject to the same deadlines and other conditions as are applicable in the case of a determination, disapproval, or finding under section 179(a) of the Act.

(4) Whenever the Administrator has made the finding and issued the notice under paragraph (c)(1) of this section,

the Administrator will, unless the State has corrected such deficiency within 18 months after the date of such finding, promulgate, administer, and enforce, a whole or partial program 2 years after the date of such finding.

(5) Nothing in this section shall limit the Administrator's authority to take any enforcement action against a source for violations of the Act or of a permit issued under rules adopted pursuant to this section in a State that has been delegated responsibility by EPA to implement a Federal program promulgated under title V of the Act.

(6) Where a whole State program consists of an aggregate of partial programs, and one or more partial programs fails to be fully approved or implemented, the Administrator may apply sanctions only in those areas for which the State failed to submit or implement an approvable program.

(c) *Criteria for withdrawal of State programs.* (1) The Administrator may, in accordance with the procedures of paragraph (c) of this section, withdraw program approval in whole or in part whenever the approved program no longer complies with the requirements of this part, and the permitting authority fails to take corrective action. Such circumstances, in whole or in part, include any of the following:

(i) Where the permitting authority's legal authority no longer meets the requirements of this part, including the following:

(A) The permitting authority fails to promulgate or enact new authorities when necessary; or

(B) The State legislature or a court strikes down or limits State authorities to administer or enforce the State program.

(ii) Where the operation of the State program fails to comply with the requirements of this part, including the following:

(A) Failure to exercise control over activities required to be regulated under this part, including failure to issue permits;

(B) Repeated issuance of permits that do not conform to the requirements of this part;

(C) Failure to comply with the public participation requirements of § 70.7(h) of this part;

(D) Failure to collect, retain, or allocate fee revenue consistent with § 70.9 of this part; or

(E) Failure in a timely way to act on any applications for permits including renewals and revisions.

(iii) Where the State fails to enforce the part 70 program consistent with the requirements of this part, including the following:

(A) Failure to act on violations of permits or other program requirements;

(B) Failure to seek adequate enforcement penalties and fines and collect all assessed penalties and fines; or

(C) Failure to inspect and monitor activities subject to regulation.

(d) *Federal collection of fees.* If the Administrator determines that the fee provisions of a part 70 program do not meet the requirements of § 70.9 of this part, or if the Administrator makes a determination under paragraph (c)(1) of this section that the permitting authority is not adequately administering or enforcing an approved fee program, the Administrator may, in addition to taking any other action authorized under title V of the Act, collect reasonable fees to cover the Administrator's costs of administering the provisions of the permitting program promulgated by the Administrator, without regard to the requirements of § 70.9 of this part.

**§ 70.11 Requirements for enforcement authority.**

All programs to be approved under this part must contain the following provisions:

(a) *Enforcement authority.* Any agency administering a program shall have the following enforcement authority to address violations of program requirements by part 70 sources:

(1) To restrain or enjoin immediately and effectively any person by order or by suit in court from engaging in any activity in violation of a permit that is presenting an imminent and substantial endangerment to the public health or welfare, or the environment.

(2) To seek injunctive relief in court to enjoin any violation of any program requirement, including permit conditions, without the necessity of a prior revocation of the permit.

(3) To assess or sue to recover in court civil penalties and to seek criminal remedies, including fines, according to the following:

(i) Civil penalties shall be recoverable for the violation of any applicable requirement; any permit condition; any fee or filing requirement; any duty to allow or carry out inspection, entry or monitoring activities or, any regulation or orders issued by the permitting authority. These penalties shall be recoverable in a maximum amount of not less than \$10,000 per day per violation. State law shall not include mental state as an element of proof for civil violations.

(ii) Criminal fines shall be recoverable against any person who knowingly violates any applicable requirement; any permit condition; or any fee or filing requirement. These fines shall be recoverable in a maximum amount of not less than \$10,000 per day per violation.

(iii) Criminal fines shall be recoverable against any person who knowingly makes any false material statement, representation or certification in any form, in any notice or report required by a permit, or who knowingly renders inaccurate any required monitoring device or method. These fines shall be recoverable in a maximum amount of not less than \$10,000 per day per violation.

(b) *Burden of proof.* The burden of proof and degree of knowledge or intent required under State law for establishing violations under paragraph (a)(3) of this section shall be no greater than the burden of proof or degree of knowledge or intent required under the Act.

(c) *Appropriateness of penalties and fines.* A civil penalty or criminal fine assessed, sought, or agreed upon by the permitting authority under paragraph (a)(3) of this section shall be appropriate to the violation.

**APPENDIX A TO PART 70—APPROVAL STATUS OF STATE AND LOCAL OPERATING PERMITS PROGRAMS**

This appendix provides information on the approval status of State and Local operating Permit Programs. An approved State part 70 program applies to all part 70 sources, as defined in that approved program, within such State, except for any source of air pollution

over which a federally recognized Indian Tribe has jurisdiction.

#### Alabama

(a) Alabama Department of Environmental Management: submitted on December 15, 1993, and supplemented on March 3, 1994; March 18, 1994; June 5, 1995; July 14, 1995; and August 28, 1995; interim approval effective on December 15, 1995; interim approval expires December 15, 1997.

(b) City of Huntsville Department of Natural Resources and Environmental Management: submitted on November 15, 1993, and supplemented on July 20, 1995; interim approval effective on December 15, 1995; interim approval expires December 15, 1997.

(c) Jefferson County Department of Health: submitted on December 14, 1993, and supplemented on July 14, 1995; interim approval effective on December 15, 1995; interim approval expires December 15, 1997.

#### Arkansas

(a) The ADPCE submitted its Operating Permits program on November 9, 1993, for approval. Interim approval is effective on October 10, 1995. Interim approval will expire October 8, 1997.

(b) [Reserved]

#### California

The following district programs were submitted by the California Air Resources Board on behalf of:

(a) *Amador County Air Pollution Control District* (APCD) (complete submittal received on September 30, 1994); interim approval effective on June 2, 1995; interim approval expires June 3, 1997.

(b) *Bay Area Air Quality Management District*: Submitted on November 16, 1993, amended on October 27, 1994, and effective as an interim program on July 24, 1995. Revisions to interim program submitted on March 23, 1995, and effective on August 22, 1995, unless adverse or critical comments are received by July 24, 1995. Approval of interim program, including March 23, 1995, revisions, expires July 23, 1997.

(c) *Butte County APCD* (complete submittal received on December 16, 1993); interim approval effective on June 2, 1995; interim approval expires June 3, 1997.

(d) *Calaveras County APCD* (complete submittal received on October 31, 1994); interim approval effective on June 2, 1995; interim approval expires June 3, 1997.

(e) *Colusa County APCD* (complete submittal received on February 24, 1994); interim approval effective on June 2, 1995; interim approval expires June 3, 1997.

(f) *El Dorado County APCD* (complete submittal received on November 16, 1993); in-

terim approval effective on June 2, 1995; interim approval expires June 3, 1997.

(g) *Feather River Air Quality Management District* (AQMD) (complete submittal received on December 27, 1993); interim approval effective on June 2, 1995; interim approval expires June 3, 1997.

(h) *Glenn County APCD* (complete submittal received on December 27, 1993); interim approval effective on August 14, 1995; interim approval expires August 13, 1997.

(i) *Great Basin Unified APCD* (complete submittal received on January 12, 1994); interim approval effective on June 2, 1995; interim approval expires June 3, 1997.

(j) *Imperial County APCD* (complete submittal received on March 24, 1994); interim approval effective on June 2, 1995; interim approval expires June 3, 1997.

(k) *Kern County APCD* (complete submittal received on November 16, 1993); interim approval effective on June 2, 1995; interim approval expires June 3, 1997.

(l) *Lake County AQMD* (complete submittal received on March 15, 1994); interim approval effective on August 14, 1995; interim approval expires August 13, 1997.

(m) *Lassen County APCD* (complete submittal received on January 12, 1994); interim approval effective on June 2, 1995; interim approval expires June 3, 1997.

(n) *Mariposa Air Pollution Control District*: submitted on March 8, 1995; approval effective on February 5, 1996 unless adverse or critical comments are received by January 8, 1996.

(o) *Mendocino County APCD* (complete submittal received on December 27, 1993); interim approval effective on June 2, 1995; interim approval expires June 3, 1997.

(p) *Modoc County APCD* (complete submittal received on December 27, 1993); interim approval effective on June 2, 1995; interim approval expires June 3, 1997.

(q) *Mojave Desert AQMD* (complete submittal received on March 10, 1995); interim approval effective on March 6, 1996; interim approval expires March 5, 1998.

(r) *Monterey Bay Unified Air Pollution Control District*: submitted on December 6, 1993, supplemented on February 2, 1994 and April 7, 1994, and revised by the submittal made on October 13, 1994; interim approval effective on November 6, 1995; interim approval expires November 6, 1997.

(s) *North Coast Unified AQMD* (complete submittal received on February 24, 1994); interim approval effective on June 2, 1995; interim approval expires June 3, 1997.

(t) *Northern Sierra AQMD* (complete submittal received on June 6, 1994); interim approval effective on June 2, 1995; interim approval expires June 3, 1997.

(u) *Northern Sonoma County APCD* (complete submittal received on January 12, 1994); interim approval effective on June 2, 1995; interim approval expires June 3, 1997.

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(v) *Placer County APCD* (complete submittal received on December 27, 1993); interim approval effective on June 2, 1995; interim approval expires June 3, 1997.

(w) *the Sacramento Metropolitan Air Quality Management District*: (complete submittal received on August 1, 1994); interim approval effective on September 5, 1995; interim approval expires September 4, 1997.

(x) *San Diego Air Pollution Control District*: submitted on April 22, 1994 and amended on April 4, 1995 and October 10, 1995; approval effective on February 5, 1996, unless adverse or critical comments are received by January 8, 1996.

(y) *San Joaquin Valley Unified APCD* (complete submittal received on July 5 and August 18, 1995); interim approval effective on May 24, 1996; interim approval expires May 25, 1998.

(z) *San Luis Obispo County APCD* (complete submittal received on November 16, 1995); interim approval effective on December 1, 1995; interim approval expires December 1, 1997.

(aa) *Santa Barbara County Air Pollution Control District* (APCD) submitted on November 15, 1993, as amended March 2, 1994, August 8, 1994, December 8, 1994, and June 15, 1995; interim approval effective on December 1, 1995; interim approval expires December 1, 1997.

(bb) *Shasta County AQMD* (complete submittal received on November 16, 1993); interim approval effective on August 14, 1995; interim approval expires August 13, 1997.

(cc) *Siskiyou County APCD* (complete submittal received on December 6, 1993); interim approval effective on June 2, 1995; interim approval expires June 3, 1997.

(dd) [Reserved]

(ee) *Tehama County APCD* (complete submittal received on December 6, 1993); interim approval effective on August 14, 1995; interim approval expires August 13, 1997.

(ff) *Tuolumne County APCD* (complete submittal received on November 16, 1993); interim approval effective on June 2, 1995; interim approval expires June 3, 1997.

(gg) *Ventura County Air Pollution Control District* (APCD) submitted on November 16, 1993, as amended December 6, 1993; interim approval effective on December 1, 1995; interim approval expires December 1, 1997.

(hh) *Yolo-Solano AQMD* (complete submittal received on October 14, 1994); interim approval effective on June 2, 1995; interim approval expires June 3, 1997.

### Colorado

(a) Colorado Department Health-Air Pollution Control Division: submitted on November 5, 1993; effective on February 23, 1995; interim approval expires February 24, 1997.

(b) [Reserved]

### Delaware

(a) Department of Natural Resources and Environmental Control: submitted on November 15, 1993 and amended on November 22, 1993, February 9, 1994, May 15, 1995 and September 5, 1995; interim approval effective on January 3, 1996; interim approval expires January 5, 1998.

(b) [Reserved]

### District of Columbia

(a) Environmental Regulation Administration: submitted on January 13, 1994 and March 11, 1994; interim approval effective on September 6, 1995; interim approval expires September 8, 1997.

(b) [Reserved]

### Florida

(a) Florida Department of Environmental Protection: submitted on November 16, 1993, and supplemented on July 8, 1994, November 28, 1994, December 21, 1994, December 22, 1994, and January 11, 1995; interim approval effective on October 25, 1995; interim approval expires October 25, 1997.

(b) [Reserved]

### Georgia

(a) The Georgia Department of Natural Resources submitted on November 12, 1993, and supplemented on June 24, 1994; November 14, 1994; and June 5, 1995; interim approval effective on December 22, 1995; interim approval expires December 22, 1997.

(b) [Reserved]

### Hawaii

(a) Department of Health; submitted on December 20, 1993; effective on December 1, 1994; interim approval expires December 1, 1996.

(b) [Reserved]

### Illinois

(a) The Illinois Environmental Protection Agency: submitted on November 15, 1993; interim approval effective on March 7, 1995; interim approval expires March 7, 1997.

(b) [Reserved]

### Indiana

(a) The Indiana Department of Environmental Management: submitted on August 10, 1994; interim approval effective on December 14, 1995; interim approval expires December 14, 1997.

(b) [Reserved]

*Iowa*

(a) The Iowa Department of Natural Resources submitted on November 15, 1993, and supplemented by correspondence dated March 15, 1994; August 8, 1994; October 5, 1994; December 6, 1994; December 15, 1994; February 6, 1995; March 1, 1995; March 23, 1995; and May 26, 1995. Interim approval effective on October 2, 1995; interim approval expires October 1, 1997.

(b) [Reserved]

*Kansas*

(a) The Kansas Department of Health and Environment program submitted on December 12, 1994; April 7 and 17, 1995; November 14, 1995; and December 13, 1995. Full approval effective on February 29, 1996.

(b) [Reserved]

*Kentucky*

(a) Kentucky Natural Resources and Environmental Protection Cabinet: submitted on December 27, 1993, and supplemented on November 15, 1994, April 14, 1995, May 3, 1995 and May 22, 1995; interim approval effective on December 14, 1995; interim approval expires on December 14, 1997.

(b) Air Pollution Control District of Jefferson County, Kentucky: submitted on February 1, 1994, and supplemented on November 15, 1994, May 3, 1995, July 14, 1995 and February 16, 1996; full approval effective on April 22, 1996.

*Louisiana*

(a) The Louisiana Department of Environmental Quality, Air Quality Division submitted an Operating Permits program on November 15, 1993, which was revised November 10, 1994, and became effective on October 12, 1995.

(b) [Reserved]

*Massachusetts*

(a) Department of Environmental Protection: submitted on April 28, 1995; interim approval effective on May 15, 1996; interim approval expires May 15, 1998.

(b) [Reserved]

*Minnesota*

(a) Minnesota Pollution Control Agency; submitted on November 15, 1993; effective July 17, 1995; interim approval expires July 16, 1997.

(b) [Reserved]

*Mississippi*

(a) Department of Environmental Quality: submitted on November 15, 1993; full approval effective on January 27, 1995.

(b) [Reserved]

*Missouri*

(a) The Missouri Department of Natural Resources program submitted on January 13, 1995; August 14, 1995; September 19, 1995; and October 16, 1995. Interim approval effective on May 13, 1996.

(b) [Reserved]

*Montana*

(a) Montana Department of Health and Environmental Sciences—Air Quality Division: submitted on March 29, 1994; effective on June 12, 1995; interim approval expires June 11, 1997.

(b) [Reserved]

*Nebraska; City of Omaha; Lincoln-Lancaster County Health Department*

(a) The Nebraska Department of Environmental Quality submitted on November 15, 1993, supplemented by correspondence dated November 2, 1994, and August 29, 1995, and amended Title V rules submitted June 14, 1995.

(b) Omaha Public Works Department submitted on November 15, 1993, supplemented by correspondence dated April 18, 1994; April 19, 1994; May 13, 1994; August 12, 1994; and April 13, 1995. A delegation contract between the state and the city of Omaha became effective on June 6, 1995.

(c) Lincoln-Lancaster County Health Department submitted on November 12, 1993, supplemented by correspondence dated June 23, 1994. Full approval effective on November 17, 1995.

*Nevada*

The following district program was submitted by the Nevada Division of Environmental Protection on behalf of:

(a) *Nevada Division of Environmental Protection*: submitted on February 8, 1995; interim approval effective on January 11, 1996; interim approval expires January 12, 1998.

(b) Washoe County District Health Department: submitted on November 18, 1993; interim approval effective on March 6, 1995; interim approval expires February 5, 1997.

(c) *Clark County Air Quality Management District*: submitted on January 12, 1994 and amended on July 18 and September 21, 1994; interim approval effective on August 14, 1995; interim approval expires August 13, 1997.

*New Jersey*

(a) The New Jersey Department of Environmental Protection submitted an operating permit program on November 15, 1993, revised on August 10, 1995, with supplements on August 28, 1995, November 15, 1995, December 4, 1995, and December 6, 1995; interim approval effective on June 17, 1996; interim approval expires June 16, 1998.

(b) [Reserved]

*New Mexico*

(a) Environment Department; submitted on November 15, 1993; effective date on December 19, 1994; interim approval expires on December 19, 1996.

(b) City of Albuquerque Environmental Health Department, Air Pollution Control Division: submitted on April 4, 1994; effective on March 13, 1995; interim approval expires August 10, 1996.

*North Carolina*

(a) Department of Environment, Health and Natural Resources, Western North Carolina Regional Air Pollution Control Agency, Forsyth County Department of Environmental Affairs and the Mecklenburg County Department of Environmental Protection: submitted on November 12, 1993, and supplemented on December 17, 1993; February 28, 1994; May 31, 1994; and August 9, 1995; interim approval effective on December 15, 1995; interim approval expires December 15, 1997.

(b) [Reserved]

*North Dakota*

(a) North Dakota State Department of Health and Consolidated Laboratories—Environmental Health Section: submitted on May 11, 1994; effective on August 7, 1995; interim approval expires August 7, 1997.

(b) [Reserved]

*Ohio*

(a) The Ohio Environmental Protection Agency submitted on July 22, 1994; September 12, 1994; November 21, 1994; December 9, 1994; and January 5, 1995; full approval effective on October 1, 1995.

(b) [Reserved]

*Oklahoma*

(a) The Oklahoma Department of Environmental Quality submitted its operating permits program on January 12, 1994, for approval. Source category—limited interim approval is effective on March 6, 1996. Interim approval will expire March 5, 1998. The scope of the approval of the Oklahoma part 70 pro-

gram excludes all sources of air pollution over which an Indian Tribe has jurisdiction.

(b) [Reserved]

*Oregon*

(a) Oregon Department of Environmental Quality: submitted on November 15, 1993, as amended on November 15, 1994, and June 30, 1995; full approval effective on November 27, 1995.

(b) Lane Regional Air Pollution Authority: submitted on November 15, 1993, as amended on November 15, 1994, and June 30, 1995; full approval effective on November 27, 1995.

*Puerto Rico*

(a) The Puerto Rico Environmental Quality Board submitted an operating permits program on November 15, 1993 with supplements on March 22, 1994 and April 11, 1994 and revised on September 29, 1995; full approval effective on March 27, 1996.

(b) [Reserved]

*Rhode Island*

(a) Department of Environmental Management: submitted on June 20, 1995; interim approval effective on July 5, 1996; interim approval expires July 6, 1998.

(b) [Reserved]

*South Carolina*

(a) Department of Health and Environmental Control: submitted on November 12, 1993; full approval effective on July 26, 1995.

(b) [Reserved]

*South Dakota*

(a) South Dakota Department of Environment and Natural Resources Division of Environmental Regulation: submitted on November 12, 1993; effective on April 21, 1995; interim approval expires April 22, 1997.

(b) [Reserved]

EDITORIAL NOTE: At 61 FR 2722, Jan. 29, 1996, appendix A to part 70 was amended by adding an entry for South Dakota. An entry already exists for South Dakota in the 1995 edition of this volume.

*South Dakota*

(a) South Dakota Department of Environment and Natural Resources—Division of Environmental Regulations: submitted on November 12, 1993; effective on February 28, 1996.

(b) [Reserved]

*Tennessee*

(a) [Reserved]

(b) Chattanooga-Hamilton County Air Pollution Control Bureau, Hamilton County, State of Tennessee: submitted on November 22, 1993, and supplemented on January 23, 1995, February 24, 1995, October 13, 1995, and March 14, 1996; full approval effective on April 25, 1996.

(c) The Knox County Department of Air Pollution Control; submitted on November 12, 1993, and supplemented on August 24, 1994; January 6 and 19, 1995; February 6, 1995; May 23, 1995; September 18 and 25, 1995; and March 6, 1996; full approval effective on May 30, 1996, in the FEDERAL REGISTER.

(d) The Metropolitan Health Department, Metropolitan Government of Nashville-Davidson County; submitted on November 13, 1993, and supplemented on April 19, 1994; September 27, 1994; December 28, 1994; and December 28, 1995; full approval effective on March 15, 1996.

#### *Texas*

(a) The TNRCC submitted its Operating Permits program on September 17, 1993, and supplemental submittals on October 28, 1993, and November 12, 1993, for approval. Source category-limited interim approval is effective on July 25, 1996. Interim approval will expire July 27, 1998. The scope of the approval of the Texas part 70 program excludes all sources of air pollution over which an Indian Tribe has jurisdiction.

(b) [Reserved]

#### *Utah*

(a) Utah Department of Environmental Quality—Division of Air Quality: submitted on April 14, 1994; effective on July 10, 1995.

(b) [Reserved]

#### *Virginia*

(a) Department of Environmental Quality: submitted on November 19, 1993; disapproval effective on January 4, 1995.

(b) [Reserved]

#### *Washington*

(a) Department of Ecology (Ecology): submitted on November 1, 1993; effective on December 9, 1994; interim approval expires December 9, 1996.

(b) Energy Facility Site Evaluation Council (EFSEC): submitted on November 1, 1993; effective on December 9, 1994; interim approval expires December 9, 1996.

(c) Benton County Clean Air Authority (BCCAA): submitted on November 1, 1993 and amended on September 29, 1994 and April 12, 1995; effective on December 9, 1994; interim approval expires December 9, 1996.

(d) Northwest Air Pollution Authority (NWAPA): submitted on November 1, 1993; ef-

fective on December 9, 1994; interim approval expires December 9, 1996.

(e) Olympic Air Pollution Control Authority (OAPCA): submitted on November 1, 1993; effective on December 9, 1994; interim approval expires December 9, 1996.

(f) Puget Sound Air Pollution Control Agency (PSAPCA): submitted on November 1, 1993; effective on December 9, 1994; interim approval expires December 9, 1996.

(g) Southwest Air Pollution Control Authority (SWAPCA): submitted on November 1, 1993; effective on December 9, 1994; interim approval expires December 9, 1996.

(h) Spokane County Air Pollution Control Authority (SCAPCA): submitted on November 1, 1993; effective on December 9, 1994; interim approval expires December 9, 1996.

(i) Yakima County Clean Air Authority (YCCAA): submitted on November 1, 1993 and amended on September 29, 1994; effective on December 9, 1994; interim approval expires December 9, 1996.

#### *West Virginia*

(a) Department of Commerce, Labor and Environmental Resources: submitted on November 12, 1993, and supplemented by the Division of Environmental Protection on August 26 and September 29, 1994; interim approval effective on December 15, 1995; interim approval expires December 15, 1997.

(b) [Reserved]

#### *Wisconsin*

(a) Department of Natural Resources: submitted on January 27, 1994; interim approval effective on April 5, 1995; interim approval expires April 7, 1997.

(b) [Reserved]

#### *Wyoming*

(a) Department of Environmental Quality: submitted on November 19, 1993; effective on February 21, 1995; interim approval expires February 19, 1997.

(b) [Reserved]

[59 FR 55820, Nov. 9, 1994]

EDITORIAL NOTE: For FEDERAL REGISTER citations affecting appendix A to part 70, see the List of CFR Sections Affected in the Finding Aids section of this volume.

EFFECTIVE DATE NOTES: 1. At 61 FR 20155, May 6, 1996, appendix A to part 70 was amended by adding an entry for Rhode Island, effective July 5, 1996.

2. At 61 FR 32699, June 25, 1996, appendix A to part 70 was amended by adding an entry for Texas, effective July 25, 1996.

## PART 71—FEDERAL OPERATING PERMIT PROGRAMS

### Subpart A—Operating Permits

#### Sec.

- 71.1 Program overview.
- 71.2 Definitions.
- 71.3 Sources subject to permitting requirements.
- 71.4 Program implementation.
- 71.5 Permit applications.
- 71.6 Permit content.
- 71.7 Permit issuance, renewal, reopenings, and revisions.
- 71.8 Affected State review.
- 71.9 Permit fees.
- 71.10 Delegation of part 71 program.
- 71.11 Administrative record, public participation, and administrative review.
- 71.12 Prohibited acts.

### Subpart B—Permits for Early Reductions Sources

- 71.21 Program overview.
- 71.22 Definitions.
- 71.23 Applicability.
- 71.24 Permit applications.
- 71.25 Permit content.
- 71.26 Permit issuance, reopenings, and revisions.
- 71.27 Public participation and appeal.

AUTHORITY: 42 U.S.C. 7401, *et seq.*

SOURCE: 59 FR 59924, Nov. 21, 1994, unless otherwise noted.

### Subpart A—Operating Permits

SOURCE: 61 FR 34228, July 1, 1996, unless otherwise noted.

EFFECTIVE DATE NOTE: At 61 FR 34228, July 1, 1996, subpart A to part 71 was added, effective July 31, 1996.

#### § 71.1 Program overview.

(a) This part sets forth the comprehensive Federal air quality operating permits permitting program consistent with the requirements of title V of the Act (42 U.S.C. 7401 *et seq.*) and defines the requirements and the corresponding standards and procedures by which the Administrator will issue operating permits. This permitting program is designed to promote timely and efficient implementation of goals and requirements of the Act.

(b) All sources subject to the operating permit requirements of title V and this part shall have a permit to operate

that assures compliance by the source with all applicable requirements.

(c) The requirements of this part, including provisions regarding schedules for submission and approval or disapproval of permit applications, shall apply to the permitting of affected sources under the acid rain program, except as provided herein or as modified by title IV of the Act and 40 CFR parts 72 through 78.

(d) Issuance of permits under this part may be coordinated with issuance of permits under the Resource Conservation and Recovery Act (42 U.S.C. 6901 *et seq.*) and under the Clean Water Act (33 U.S.C. 1251 *et seq.*), whether issued by the State, the U.S. Environmental Protection Agency (EPA), or the U.S. Army Corps of Engineers.

(e) Nothing in this part shall prevent a State from administering an operating permits program and establishing more stringent requirements not inconsistent with the Act.

#### § 71.2 Definitions.

The following definitions apply to part 71. Except as specifically provided in this section, terms used in this part retain the meaning accorded them under the applicable requirements of the Act.

*Act* means the Clean Air Act, as amended, 42 U.S.C. 7401 *et seq.*

*Affected source* shall have the meaning given to it in 40 CFR 72.2.

*Affected States* are:

(1) All States and Tribal areas whose air quality may be affected and that are contiguous to the State or Tribal area in which the permit, permit modification or permit renewal is being proposed; or that are within 50 miles of the permitted source. A Tribe and any associated Tribal area shall be treated as a State under this paragraph (1) only if EPA has determined that the Tribe is an eligible Tribe.

(2) The State or Tribal area in which a part 71 permit, permit modification, or permit renewal is being proposed. A Tribe and any associated Tribal area shall be treated as a State under this paragraph (2) only if EPA has determined that the Tribe is an eligible Tribe.

(3) Those areas within the jurisdiction of the air pollution control agency

for the area in which a part 71 permit, permit modification, or permit renewal is being proposed.

*Affected unit* shall have the meaning given to it in 40 CFR 72.2.

*Applicable requirement* means all of the following as they apply to emissions units in a part 71 source (including requirements that have been promulgated or approved by EPA through rulemaking at the time of issuance but have future compliance dates):

(1) Any standard or other requirement provided for in the applicable implementation plan approved or promulgated by EPA through rulemaking under title I of the Act that implements the relevant requirements of the Act, including any revisions to that plan promulgated in part 52 of this chapter;

(2) Any term or condition of any preconstruction permits issued pursuant to regulations approved or promulgated through rulemaking under title I, including parts C or D, of the Act;

(3) Any standard or other requirement under section 111 of the Act, including section 111(d);

(4) Any standard or other requirement under section 112 of the Act, including any requirement concerning accident prevention under section 112(r)(7) of the Act;

(5) Any standard or other requirement of the acid rain program under title IV of the Act or 40 CFR parts 72 through 78;

(6) Any requirements established pursuant to section 114(a)(3) or 504(b) of the Act;

(7) Any standard or other requirement governing solid waste incineration, under section 129 of the Act;

(8) Any standard or other requirement for consumer and commercial products, under section 183(e) of the Act;

(9) Any standard or other requirement for tank vessels, under section 183(f) of the Act;

(10) Any standard or other requirement of the program to control air pollution from outer continental shelf sources, under section 328 of the Act;

(11) Any standard or other requirement of the regulations promulgated at 40 CFR part 82 to protect stratospheric ozone under title VI of the Act, unless

the Administrator has determined that such requirements need not be contained in a title V permit; and

(12) Any national ambient air quality standard or increment or visibility requirement under part C of title I of the Act, but only as it would apply to temporary sources permitted pursuant to section 504(e) of the Act.

*Delegate agency* means the State air pollution control agency, local agency, other State agency, Tribal agency, or other agency authorized by the Administrator pursuant to § 71.10 to carry out all or part of a permit program under part 71.

*Designated representative* shall have the meaning given to it in section 402(26) of the Act and 40 CFR 72.2.

*Draft permit* means the version of a permit for which the permitting authority offers public participation under § 71.7 or § 71.11 and affected State review under § 71.8.

*Eligible Indian Tribe* or *eligible Tribe* means a Tribe that has been determined by EPA to meet the criteria for being treated in the same manner as a State, pursuant to the regulations implementing section 301(d)(2) of the Act.

*Emissions allowable under the permit* means a federally enforceable permit term or condition determined at issuance to be required by an applicable requirement that establishes an emissions limit (including a work practice standard) or a federally enforceable emissions cap that the source has assumed to avoid an applicable requirement to which the source would otherwise be subject.

*Emissions unit* means any part or activity of a stationary source that emits or has the potential to emit any regulated air pollutant or any pollutant listed under section 112(b) of the Act. This term is not meant to alter or affect the definition of the term “unit” for purposes of title IV of the Act.

*EPA* or the *Administrator* means the Administrator of the U.S. Environmental Protection Agency (EPA) or his or her designee.

*Federal Indian reservation, Indian reservation* or *reservation* means all land

within the limits of any Indian reservation under the jurisdiction of the United States Government, notwithstanding the issuance of any patent, and including rights-of-way running through the reservation.

*Final permit* means the version of a part 71 permit issued by the permitting authority that has completed all review procedures required by §§ 71.7, 71.8, and 71.11.

*Fugitive emissions* are those emissions which could not reasonably pass through a stack, chimney, vent, or other functionally-equivalent opening.

*General permit* means a part 71 permit that meets the requirements of § 71.6(d).

*Indian Tribe* or *Tribe* means any Indian Tribe, band, nation, or other organized group or community, including any Alaskan native village, which is federally recognized as eligible for the special programs and services provided by the United States to Indians because of their status as Indians.

*Major source* means any stationary source (or any group of stationary sources that are located on one or more contiguous or adjacent properties, and are under common control of the same person (or persons under common control)), belonging to a single major industrial grouping and that are described in paragraph (1), (2), or (3) of this definition. For the purposes of defining "major source," a stationary source or group of stationary sources shall be considered part of a single industrial grouping if all of the pollutant emitting activities at such source or group of sources on contiguous or adjacent properties belong to the same Major Group (i.e., all have the same two-digit code) as described in the Standard Industrial Classification Manual, 1987.

(1) A major source under section 112 of the Act, which is defined as:

(i) For pollutants other than radionuclides, any stationary source or group of stationary sources located within a contiguous area and under common control that emits or has the potential to emit, in the aggregate, 10 tpy or more of any hazardous air pollutant which has been listed pursuant to section 112(b) of the Act, 25 tpy or more of any combination of such haz-

ardous air pollutants, or such lesser quantity as the Administrator may establish by rule. Notwithstanding the preceding sentence, emissions from any oil or gas exploration or production well (with its associated equipment) and emissions from any pipeline compressor or pump station shall not be aggregated with emissions from other similar units, whether or not such units are in a contiguous area or under common control, to determine whether such units or stations are major sources; or

(ii) For radionuclides, "major source" shall have the meaning specified by the Administrator by rule.

(2) A major stationary source of air pollutants or any group of stationary sources as defined in section 302 of the Act, that directly emits, or has the potential to emit, 100 tpy or more of any air pollutant (including any major source of fugitive emissions of any such pollutant, as determined by rule by the Administrator). The fugitive emissions of a stationary source shall not be considered in determining whether it is a major stationary source for the purposes of section 302(j) of the Act, unless the source belongs to one of the following categories of stationary source:

- (i) Coal cleaning plants (with thermal dryers);
- (ii) Kraft pulp mills;
- (iii) Portland cement plants;
- (iv) Primary zinc smelters;
- (v) Iron and steel mills;
- (vi) Primary aluminum ore reduction plants;
- (vii) Primary copper smelters;
- (viii) Municipal incinerators capable of charging more than 250 tons of refuse per day;
- (ix) Hydrofluoric, sulfuric, or nitric acid plants;
- (x) Petroleum refineries;
- (xi) Lime plants;
- (xii) Phosphate rock processing plants;
- (xiii) Coke oven batteries;
- (xiv) Sulfur recovery plants;
- (xv) Carbon black plants (furnace process);
- (xvi) Primary lead smelters;
- (xvii) Fuel conversion plants;
- (xviii) Sintering plants;

(xix) Secondary metal production plants;

(xx) Chemical process plants;

(xxi) Fossil-fuel boilers (or combination thereof) totaling more than 250 million British thermal units per hour heat input;

(xxii) Petroleum storage and transfer units with a total storage capacity exceeding 300,000 barrels;

(xxiii) Taconite ore processing plants;

(xxiv) Glass fiber processing plants;

(xxv) Charcoal production plants;

(xxvi) Fossil-fuel-fired steam electric plants of more than 250 million British thermal units per hour heat input; or

(xxvii) Any other stationary source category which, as of August 7, 1980, is being regulated under section 111 or 112 of the Act.

(3) A major stationary source as defined in part D of title I of the Act, including:

(i) For ozone nonattainment areas, sources with the potential to emit 100 tpy or more of volatile organic compounds or oxides of nitrogen in areas classified as "marginal" or "moderate," 50 tpy or more in areas classified as "serious"; 25 tpy or more in areas classified as "severe," and 10 tpy or more in areas classified as "extreme"; except that the references in this paragraph (3)(i) to 100, 50, 25, and 10 tpy of nitrogen oxides shall not apply with respect to any source for which the Administrator has made a finding, under section 182(f) (1) or (2) of the Act, that requirements under section 182(f) of the Act do not apply;

(ii) For ozone transport regions established pursuant to section 184 of the Act, sources with the potential to emit 50 tpy or more of volatile organic compounds;

(iii) For carbon monoxide nonattainment areas:

(A) That are classified as "serious," and

(B) in which stationary sources contribute significantly to carbon monoxide levels as determined under rules issued by the Administrator, sources with the potential to emit 50 tpy or more of carbon monoxide; and

(iv) For particulate matter (PM-10) nonattainment areas classified as "se-

rious," sources with the potential to emit 70 tpy or more of PM-10.

*Part 70 permit* means any permit or group of permits covering a part 70 source that has been issued, renewed, amended or revised pursuant to 40 CFR part 70.

*Part 70 program* or *State program* means a program approved by the Administrator under 40 CFR part 70.

*Part 70 source* means any source subject to the permitting requirements of 40 CFR part 70, as provided in §§ 70.3(a) and 70.3(b).

*Part 71 permit*, or *permit* (unless the context suggests otherwise) means any permit or group of permits covering a part 71 source that has been issued, renewed, amended or revised pursuant to this part.

*Part 71 program* means a Federal operating permits program under this part.

*Part 71 source* means any source subject to the permitting requirements of this part, as provided in §§ 71.3(a) and 71.3(b).

*Permit modification* means a revision to a part 71 permit that meets the requirements of § 71.7(e).

*Permit program costs* means all reasonable (direct and indirect) costs required to administer an operating permits program, as set forth in § 71.9(b).

*Permit revision* means any permit modification or administrative permit amendment.

*Permitting authority* means one of the following:

(1) The Administrator, in the case of EPA-implemented programs;

(2) A delegate agency authorized by the Administrator to carry out a Federal permit program under this part; or

(3) The State air pollution control agency, local agency, other State agency, Indian Tribe, or other agency authorized by the Administrator to carry out a permit program under 40 CFR part 70.

*Proposed permit* means the version of a permit that the delegate agency proposes to issue and forwards to the Administrator for review in compliance with § 71.10(d).

*Regulated air pollutant* means the following:

(1) Nitrogen oxides or any volatile organic compounds;

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(2) Any pollutant for which a national ambient air quality standard has been promulgated;

(3) Any pollutant that is subject to any standard promulgated under section 111 of the Act;

(4) Any Class I or II substance subject to a standard promulgated under or established by title VI of the Act; or

(5) Any pollutant subject to a standard promulgated under section 112 of the Act or other requirements established under section 112 of the Act, including sections 112 (g), (j), and (r) of the Act, including the following:

(i) Any pollutant subject to requirements under section 112(j) of the Act. If the Administrator fails to promulgate a standard by the date established pursuant to section 112(e) of the Act, any pollutant for which a subject source would be major shall be considered to be regulated on the date 18 months after the applicable date established pursuant to section 112(e) of the Act; and

(ii) Any pollutant for which the requirements of section 112(g)(2) of the Act have been met, but only with respect to the individual source subject to section 112(g)(2) requirements.

*Regulated pollutant (for fee calculation)*, which is used only for purposes of § 71.9(c), means any regulated air pollutant except the following:

(1) Carbon monoxide;

(2) Any pollutant that is a regulated air pollutant solely because it is a Class I or II substance subject to a standard promulgated under or established by title VI of the Act; or

(3) Any pollutant that is a regulated air pollutant solely because it is subject to a standard or regulation under section 112(r) of the Act.

*Renewal* means the process by which a permit is reissued at the end of its term.

*Responsible official* means one of the following:

(1) For a corporation: a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation, or a duly authorized representative of such person if the representative is responsible for the over-

all operation of one or more manufacturing, production, or operating facilities applying for or subject to a permit and either:

(i) the facilities employ more than 250 persons or have gross annual sales or expenditures exceeding \$25 million (in second quarter 1980 dollars); or

(ii) the delegation of authority to such representative is approved in advance by the permitting authority;

(2) For a partnership or sole proprietorship: a general partner or the proprietor, respectively;

(3) For a municipality, State, Federal, or other public agency: Either a principal executive officer or ranking elected official. For the purposes of this part, a principal executive officer of a Federal agency includes the chief executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., a Regional Administrator of EPA); or

(4) For affected sources:

(i) The designated representative insofar as actions, standards, requirements, or prohibitions under title IV of the Act or 40 CFR parts 72 through 78 are concerned; and

(ii) The designated representative for any other purposes under part 71.

*Section 502(b)(10) changes* are changes that contravene an express permit term. Such changes do not include changes that would violate applicable requirements or contravene federally enforceable permit terms and conditions that are monitoring (including test methods), recordkeeping, reporting, or compliance certification requirements.

*State* means any non-Federal permitting authority, including any local agency, interstate association, or statewide program. The term "State" also includes the District of Columbia, the Commonwealth of Puerto Rico, the Virgin Islands, Guam, American Samoa, and the Commonwealth of the Northern Marianas Islands. Where such meaning is clear from the context, "State" shall have its conventional meaning. For purposes of the acid rain program, the term "State" shall be limited to authorities within the 48 contiguous States and the District of Columbia as provided in section 402(14) of the Act.

*Stationary source* means any building, structure, facility, or installation that emits or may emit any regulated air pollutant or any pollutant listed under section 112(b) of the Act.

**§ 71.3 Sources subject to permitting requirements.**

(a) *Part 71 sources.* The following sources are subject to the permitting requirements under this part:

- (1) Any major source;
- (2) Any source, including an area source, subject to a standard, limitation, or other requirement under section 111 of the Act;
- (3) Any source, including an area source, subject to a standard or other requirement under section 112 of the Act, except that a source is not required to obtain a permit solely because it is subject to regulations or requirements under section 112(r) of the Act;
- (4) Any affected source; and
- (5) Any source in a source category designated by the Administrator pursuant to this section.

(b) *Source category exemptions.* (1) All sources listed in paragraph (a) of this section that are not major sources, affected sources, or solid waste incineration units required to obtain a permit pursuant to section 129(e) of the Act are exempted from the obligation to obtain a part 71 permit until such time as the Administrator completes a rule-making to determine how the program should be structured for nonmajor sources and the appropriateness of any permanent exemptions in addition to those provided for in paragraph (b)(4) of this section.

(2) In the case of nonmajor sources subject to a standard or other requirement under either section 111 or 112 of the Act after July 21, 1992 publication, the Administrator will determine whether to exempt any or all such applicable sources from the requirement to obtain a part 70 or part 71 permit at the time that the new standard is promulgated.

(3) Any source listed in paragraph (a) of this section exempt from the requirement to obtain a permit under this section may opt to apply for a permit under a part 71 program.

(4) The following source categories are exempted from the obligation to obtain a part 71 permit:

(i) All sources and source categories that would be required to obtain a permit solely because they are subject to 40 CFR part 60, Subpart AAA—Standards of Performance for New Residential Wood Heaters; and

(ii) All sources and source categories that would be required to obtain a permit solely because they are subject to 40 CFR part 61, Subpart M—National Emission Standard for Hazardous Air Pollutants for Asbestos, § 61.145, Standard for Demolition and Renovation.

(c) *Emissions units and part 71 sources.*

(1) For major sources, the permitting authority shall include in the permit all applicable requirements for all relevant emissions units in the major source.

(2) For any nonmajor source subject to the part 71 program under paragraphs (a) or (b) of this section, the permitting authority shall include in the permit all applicable requirements applicable to emissions units that cause the source to be subject to the part 71 program.

(d) *Fugitive emissions.* Fugitive emissions from a part 71 source shall be included in the permit application and the part 71 permit in the same manner as stack emissions, regardless of whether the source category in question is included in the list of sources contained in the definition of major source.

**§ 71.4 Program implementation.**

(a) *Part 71 programs for States.* The Administrator will administer and enforce a full or partial operating permits program for a State (excluding Tribal areas) in the following situations:

(1) A program for a State meeting the requirements of part 70 of this chapter has not been granted full approval under § 70.4 of this chapter by the Administrator by July 31, 1996, and the State's part 70 program has not been granted interim approval under § 70.4(d) of this chapter for a period extending beyond July 31, 1996. The effective date of such a part 71 program is July 31, 1996.

(2) An operating permits program for a State which was granted interim approval under § 70.4(d) of this chapter has not been granted full approval by the Administrator by the expiration of the interim approval period or July 31, 1996, whichever is later. Such a part 71 program shall be effective upon expiration of the interim approval or July 31, 1996 whichever is later.

(3) Any partial part 71 program will be effective only in those portions of a State that are not covered by a partial part 70 program that has been granted full or interim approval by the Administrator pursuant to § 70.4(c) of this chapter.

(b) *Part 71 programs for Tribal areas.* The Administrator may administer and enforce an operating permits program for a Tribal area, as defined in § 71.2, or by a rulemaking, when an operating permits program for the area which meets the requirements of part 70 of this chapter has not been granted full or interim approval by the Administrator by July 31, 1996.

(1) [Reserved]

(2) The effective date of a part 71 program for a Tribal area shall be November 15, 1997.

(3) Notwithstanding paragraph (b)(2) of this section, the Administrator, in consultation with the governing body of the Tribal area, may adopt an earlier effective date.

(4) Notwithstanding paragraph (i)(2) of this section, within 2 years of the effective date of the part 71 program for the Tribal area, the Administrator shall take final action on permit applications from part 71 sources that are submitted within the first full year after the effective date of the part 71 program.

(c) *Part 71 programs imposed due to inadequate implementation.* (1) The Administrator will administer and enforce an operating permits program for a permitting authority if the Administrator has notified the permitting authority, in accordance with § 70.10(b)(1) of this chapter, of the Administrator's determination that a permitting authority is not adequately administering or enforcing its approved operating permits program, or any portion thereof, and the permitting authority fails to do either of the following:

(i) Correct the deficiencies within 18 months after the Administrator issues the notice; or

(ii) Take significant action to assure adequate administration and enforcement of the program within 90 days of the Administrator's notice.

(2) The effective date of a part 71 program promulgated in accordance with this paragraph (c) shall be:

(i) Two years after the Administrator's notice if the permitting authority has not corrected the deficiency within 18 months after the date of the Administrator's notice; or

(ii) Such earlier time as the Administrator determines appropriate if the permitting authority fails, within 90 days of the Administrator's notice, to take significant action to assure adequate administration and enforcement of the program.

(d) *Part 71 programs for OCS sources.*

(1) Using the procedures of this part, the Administrator will issue permits to any source which is an outer continental shelf (OCS) source, as defined under § 55.2 of this chapter, is subject to the requirements of part 55 of this chapter and section 328(a) of the Act, is subject to the requirement to obtain a permit under title V of the Act, and is either:

(i) Located beyond 25 miles of States' seaward boundaries; or

(ii) Located within 25 miles of States' seaward boundaries and a part 71 program is being administered and enforced by the Administrator for the corresponding onshore area, as defined in § 55.2 of this chapter, for that source.

(2) The requirements of § 71.4(d)(1)(i) shall apply on July 31, 1996.

(3) The requirements of § 71.4(d)(1)(ii) apply upon the effective date of a part 71 program for the corresponding onshore area.

(e) *Part 71 program for permits issued to satisfy an EPA objection.* Using the procedures of this part and 40 CFR 70.8 (c) or (d), or 40 CFR 70.7(g)(4) or (5) (i) and (ii), as appropriate, the Administrator will deny, terminate, revise, revoke or reissue a permit which has been proposed or issued by a permitting authority or will issue a part 71 permit when:

(1) A permitting authority with an approved part 70 operating permits program fails to respond to a timely objection to the issuance of a permit made

by the Administrator pursuant to section 505(b) of the Act and § 70.8(c) and (d) of this chapter.

(2) The Administrator, under § 70.7(g) of this chapter, finds that cause exists to reopen a permit and the permitting authority fails to either:

(i) Submit to the Administrator a proposed determination of termination, modification, or revocation and reissuance, as appropriate; or

(ii) Resolve any objection EPA makes to the permit which the permitting authority proposes to issue in response to EPA's finding of cause to reopen, and to terminate, revise, or revoke and reissue the permit in accordance with that objection.

(3) The requirements of this paragraph (e) shall apply on July 31, 1996.

(f) *Use of selected provisions of this part.* The Administrator may utilize any or all of the provisions of this part to administer the permitting process for individual sources or take action on individual permits, or may adopt through rulemaking portions of a State or Tribal program in combination with provisions of this part to administer a Federal program for the State or Tribal area in substitution of or addition to the Federal program otherwise required by this part.

(g) *Public notice of part 71 programs.* In taking action to administer and enforce an operating permits program under this part, the Administrator will publish a notice in the FEDERAL REGISTER informing the public of such action and the effective date of any part 71 program as set forth in § 71.4 (a), (b), (c), or (d)(1)(ii). The publication of this part in the FEDERAL REGISTER on July 1, 1996 serves as the notice for the part 71 permit programs described in § 71.4(d)(1) (i) and (e). The EPA will also publish a notice in the FEDERAL REGISTER of any delegation of a portion of the part 71 program to a State, eligible Tribe, or local agency pursuant to the provisions of § 71.10. In addition to notices published in the FEDERAL REGISTER under this paragraph (g), the Administrator will, to the extent practicable, publish notice in a newspaper of general circulation within the area subject to the part 71 program effectiveness or delegation, and will send a letter to the Tribal governing body for

an Indian Tribe or the Governor (or his or her designee) of the affected area to provide notice of such effectiveness or delegation.

(h) *Effect of limited deficiencies in State or Tribal programs.* The Administrator may administer and enforce a part 71 program in a State or Tribal area even if only limited deficiencies exist either in the initial program submittal for a State or eligible Tribe under part 70 of this chapter or in an existing State or Tribal program that has been approved under part 70 of this chapter.

(i) *Transition plan for initial permit issuance.* If a full or partial part 71 program becomes effective in a State or Tribal area prior to the issuance of part 70 permits to all part 70 sources under an existing program that has been approved under part 70 of this chapter, the Administrator shall take final action on initial permit applications for all part 71 sources in accordance with the following transition plan.

(1) All part 71 sources that have not received part 70 permits shall submit permit applications under this part within 1 year after the effective date of the part 71 program.

(2) Final action shall be taken on at least one-third of such applications annually over a period not to exceed 3 years after such effective date.

(3) Any complete permit application containing an early reduction demonstration under section 112(i)(5) of the Act shall be acted on within 12 months of receipt of the complete application.

(4) Submittal of permit applications and the permitting of affected sources shall occur in accordance with the deadlines in title IV of the Act and 40 CFR parts 72 through 78.

(j) *Delegation of part 71 programs.* The Administrator may promulgate a part 71 program in a State or Tribal area and delegate part of the responsibility for administering the part 71 program to the State or eligible Tribe in accordance with the provisions of § 71.10; however, delegation of a part of a program will not constitute any type of approval of a State or Tribal operating permits program under part 70 of this chapter. Where only selected portions of a part 71 program are administered by the Administrator and the State or

eligible Tribe is delegated the remaining portions of the program, the Delegation Agreement referred to in § 71.10 will define the respective roles of the State or eligible Tribe and the Administrator in administering and enforcing the part 71 operating permits program.

(k) *EPA administration and enforcement of part 70 permits.* When the Administrator administers and enforces a part 71 program after a determination and notice under § 70.10(b)(1) of this chapter that a State or Tribe is not adequately administering and enforcing an operating permits program approved under part 70 of this chapter, the Administrator will administer and enforce permits issued under the part 70 program until part 71 permits are issued using the procedures of part 71. Until such time as part 70 permits are replaced by part 71 permits, the Administrator will revise, reopen, revise, terminate, or revoke and reissue part 70 permits using the procedures of part 71 and will assess and collect fees in accordance with the provisions of § 71.9.

(l) *Transition to approved part 70 program.* The Administrator will suspend the issuance of part 71 permits promptly upon publication of notice of approval of a State or Tribal operating permits program that meets the requirements of part 70 of this chapter. The Administrator may retain jurisdiction over the part 71 permits for which the administrative or judicial review process is not complete and will address this issue in the notice of State program approval. After approval of a State or Tribal program and the suspension of issuance of part 71 permits by the Administrator:

(1) The Administrator, or the permitting authority acting as the Administrator's delegated agent, will continue to administer and enforce part 71 permits until they are replaced by permits issued under the approved part 70 program. Until such time as part 71 permits are replaced by part 70 permits, the Administrator will revise, reopen, revise, terminate, or revoke and reissue part 71 permits using the procedures of the part 71 program. However, if the Administrator has delegated authority to administer part 71 permits to a delegate agency, the delegate agency will revise, reopen, terminate,

or revoke and reissue part 71 permits using the procedures of the approved part 70 program. If a part 71 permit expires prior to the issuance of a part 70 permit, all terms and conditions of the part 71 permit, including any permit shield that may be granted pursuant to § 71.6(f), shall remain in effect until the part 70 permit is issued or denied, provided that a timely and complete application for a permit renewal was submitted to the permitting authority in accordance with the requirements of the approved part 70 program.

(2) A State or local agency or Indian Tribe with an approved part 70 operating permits program may issue part 70 permits for all sources with part 71 permits in accordance with a permit issuance schedule approved as part of the approved part 70 program or may issue part 70 permits to such sources at the expiration of the part 71 permits.

(m) *Exemption for certain territories.* Upon petition by the Governor of Guam, American Samoa, the Virgin Islands, or the Commonwealth of the Northern Marianas Islands, the Administrator may exempt any source or class of sources in such territory from the requirement to have a part 71 permit under this chapter. Such an exemption does not exempt such source or class of sources from any requirement of section 112 of the Act, including the requirements of section 112 (g) or (j).

(1) Such exemption may be granted if the Administrator finds that compliance with part 71 is not feasible or is unreasonable due to unique geographical, meteorological, or economic factors of such territory, or such other local factors as the Administrator deems significant. Any such petition shall be considered in accordance with section 307(d) of the Act, and any exemption granted under this paragraph (m) shall be considered final action by the Administrator for the purposes of section 307(b) of the Act.

(2) The Administrator shall promptly notify the Committees on Energy and Commerce and on Interior and Insular Affairs of the House of Representatives and the Committees on Environment and Public Works and on Energy and Natural Resources of the Senate upon

receipt of any petition under this paragraph (m) and of the approval or rejection of such petition and the basis for such action.

(n) *Retention of records.* The records for each draft, proposed, and final permit application, renewal, or modification shall be kept by the Administrator for a period of 5 years.

#### § 71.5 Permit applications.

(a) *Duty to apply.* For each part 71 source, the owner or operator shall submit a timely and complete permit application in accordance with this section.

(1) *Timely application.* (i) A timely application for a source which does not have an existing operating permit issued by a State under the State's approved part 70 program and is applying for a part 71 permit for the first time is one that is submitted within 12 months after the source becomes subject to the permit program or on or before such earlier date as the permitting authority may establish. Sources required to submit applications earlier than 12 months after the source becomes subject to the permit program will be notified of the earlier submittal date at least 6 months in advance of the date.

(ii) Part 71 sources required to meet the requirements under section 112(g) of the Act, or to have a permit under the preconstruction review program approved into the applicable implementation plan under part C or D of title I of the Act, shall file a complete application to obtain the part 71 permit or permit revision within 12 months after commencing operation or on or before such earlier date as the permitting authority may establish. Sources required to submit applications earlier than 12 months after the source becomes subject to the permit program will be notified of the earlier submittal date at least 6 months in advance of the date. Where an existing part 70 or 71 permit would prohibit such construction or change in operation, the source must obtain a permit revision before commencing operation.

(iii) For purposes of permit renewal, a timely application is one that is submitted at least 6 months but not more than 18 months prior to expiration of the part 70 or 71 permit.

(iv) Applications for initial phase II acid rain permits shall be submitted to the permitting authority by January 1, 1996 for sulfur dioxide, and by January 1, 1998 for nitrogen oxides.

(2) *Complete application.* To be deemed complete, an application must provide all information required pursuant to paragraph (c) of this section, except that applications for permit revision need supply such information only if it is related to the proposed change. To be found complete, an initial or renewal application must remit payment of fees owed under the fee schedule established pursuant to § 71.9(b). Information required under paragraph (c) of this section must be sufficient to evaluate the subject source and its application and to determine all applicable requirements. A responsible official must certify the submitted information consistent with paragraph (d) of this section. Unless the permitting authority determines that an application is not complete within 60 days of receipt of the application, such application shall be deemed to be complete, except as otherwise provided in § 71.7(a)(4). If, while processing an application that has been determined or deemed to be complete, the permitting authority determines that additional information is necessary to evaluate or take final action on that application, it may request such information in writing and set a reasonable deadline for a response. The source's ability to operate without a permit, as set forth in § 71.7(b), shall be in effect from the date the application is determined or deemed to be complete until the final permit is issued, provided that the applicant submits any requested additional information by the deadline specified by the permitting authority.

(3) *Confidential information.* An applicant may assert a business confidentiality claim for information requested by the permitting authority using procedures found at part 2, subpart B of this chapter.

(b) *Duty to supplement or correct application.* Any applicant who fails to submit any relevant facts or who has submitted incorrect information in a permit application shall, upon becoming

aware of such failure or incorrect submittal, promptly submit such supplementary facts or corrected information. In addition, an applicant shall provide additional information as necessary to address any requirements that become applicable to the source after the date it filed a complete application but prior to release of a draft permit.

(c) *Standard application form and required information.* The permitting authority shall provide sources a standard application form or forms. The permitting authority may use discretion in developing application forms that best meet program needs and administrative efficiency. The forms and attachments chosen, however, shall include the elements specified below. An application may not omit information needed to determine the applicability of, or to impose, any applicable requirement, or to evaluate the fee amount required under the schedule established pursuant to § 71.9.

(1) Identifying information, including company name and address (or plant name and address if different from the company name), owner's name and agent, and telephone number and names of plant site manager/contact.

(2) A description of the source's processes and products (by Standard Industrial Classification Code) including any associated with each alternate scenario identified by the source.

(3) The following emissions-related information:

(i) All emissions of pollutants for which the source is major, and all emissions of regulated air pollutants. A permit application shall describe all emissions of regulated air pollutants emitted from any emissions unit, except where such units are exempted under this paragraph (c). The permitting authority shall require additional information related to the emissions of air pollutants sufficient to verify which requirements are applicable to the source, and other information necessary to collect any permit fees owed under the fee schedule established pursuant to § 71.9(b).

(ii) Identification and description of all points of emissions described in paragraph (c)(3)(i) of this section in sufficient detail to establish the basis

for fees and applicability of requirements of the Act.

(iii) Emissions rates in tpy and in such terms as are necessary to establish compliance consistent with the applicable standard reference test method.

(iv) The following information to the extent it is needed to determine or regulate emissions: fuels, fuel use, raw materials, production rates, and operating schedules.

(v) Identification and description of air pollution control equipment and compliance monitoring devices or activities.

(vi) Limitations on source operation affecting emissions or any work practice standards, where applicable, for all regulated pollutants at the part 71 source.

(vii) Other information required by any applicable requirement (including information related to stack height limitations developed pursuant to section 123 of the Act).

(viii) Calculations on which the information in paragraphs (c)(3) (i) through (vii) of this section is based.

(4) The following air pollution control requirements:

(i) Citation and description of all applicable requirements; and

(ii) Description of or reference to any applicable test method for determining compliance with each applicable requirement.

(5) Other specific information that may be necessary to implement and enforce other applicable requirements of the Act or of this part or to determine the applicability of such requirements.

(6) An explanation of any proposed exemptions from otherwise applicable requirements.

(7) Additional information as determined to be necessary by the permitting authority to define alternative operating scenarios identified by the source pursuant to § 71.6(a)(9) or to define permit terms and conditions implementing § 71.6(a)(10) or § 71.6(a)(13).

(8) A compliance plan for all part 71 sources that contains all the following:

(i) A description of the compliance status of the source with respect to all applicable requirements.

(ii) A description as follows:

(A) For applicable requirements with which the source is in compliance, a statement that the source will continue to comply with such requirements.

(B) For applicable requirements that will become effective during the permit term, a statement that the source will meet such requirements on a timely basis.

(C) For requirements for which the source is not in compliance at the time of permit issuance, a narrative description of how the source will achieve compliance with such requirements.

(iii) A compliance schedule as follows:

(A) For applicable requirements with which the source is in compliance, a statement that the source will continue to comply with such requirements.

(B) For applicable requirements that will become effective during the permit term, a statement that the source will meet such requirements on a timely basis. A statement that the source will meet in a timely manner applicable requirements that become effective during the permit term shall satisfy this provision, unless a more detailed schedule is expressly required by the applicable requirement.

(C) A schedule of compliance for sources that are not in compliance with all applicable requirements at the time of permit issuance. Such a schedule shall include a schedule of remedial measures, including an enforceable sequence of actions with milestones, leading to compliance with any applicable requirements for which the source will be in noncompliance at the time of permit issuance. This compliance schedule shall resemble and be at least as stringent as that contained in any judicial consent decree or administrative order to which the source is subject. Any such schedule of compliance shall be supplemental to, and shall not sanction noncompliance with, the applicable requirements on which it is based.

(iv) A schedule for submission of certified progress reports no less frequently than every 6 months for sources required to have a schedule of compliance to remedy a violation.

(v) The compliance plan content requirements specified in this paragraph shall apply and be included in the acid rain portion of a compliance plan for an affected source, except as specifically superseded by regulations promulgated under parts 72 through 78 of this chapter with regard to the schedule and method(s) the source will use to achieve compliance with the acid rain emissions limitations.

(9) Requirements for compliance certification, including the following:

(i) A certification of compliance with all applicable requirements by a responsible official consistent with paragraph (d) of this section and section 114(a)(3) of the Act;

(ii) A statement of methods used for determining compliance, including a description of monitoring, record-keeping, and reporting requirements and test methods;

(iii) A schedule for submission of compliance certifications during the permit term, to be submitted no less frequently than annually, or more frequently if specified by the underlying applicable requirement or by the permitting authority; and

(iv) A statement indicating the source's compliance status with any applicable enhanced monitoring and compliance certification requirements of the Act.

(10) The use of nationally-standardized forms for acid rain portions of permit applications and compliance plans, as required by regulations promulgated under parts 72 through 78 of this chapter.

(11) *Insignificant activities and emissions levels.* The following types of insignificant activities and emissions levels need not be included in permit applications. However, for insignificant activities which are exempted because of size or production rate, a list of such insignificant activities must be included in the application. An application may not omit information needed to determine the applicability of, or to impose, any applicable requirement, or to calculate the fee amount required under the schedule established pursuant to § 71.9 of this part.

(i) *Insignificant activities:*

(A) Mobile sources;

(B) Air-conditioning units used for human comfort that are not subject to applicable requirements under title VI of the Act and do not exhaust air pollutants into the ambient air from any manufacturing or other industrial process;

(C) Ventilating units used for human comfort that do not exhaust air pollutants into the ambient air from any manufacturing or other industrial process;

(D) Heating units used for human comfort that do not provide heat for any manufacturing or other industrial process;

(E) Noncommercial food preparation;

(F) Consumer use of office equipment and products;

(G) Janitorial services and consumer use of janitorial products; and

(H) Internal combustion engines used for landscaping purposes.

(ii) *Insignificant emissions levels.* Emissions meeting the criteria in paragraph (c)(11)(ii)(A) or (c)(11)(ii)(B) of this section need not be included in the application, but must be listed with sufficient detail to identify the emission unit and indicate that the exemption applies. Similar emission units, including similar capacities or sizes, may be listed under a single description, provided the number of emission units is included in the description. No additional information is required at time of application, but the permitting authority may request additional information during application processing.

(A) *Emission criteria for regulated air pollutants, excluding hazardous air pollutants (HAP).* Potential to emit of regulated air pollutants, excluding HAP, for any single emissions unit shall not exceed 2 tpy.

(B) *Emission criteria for HAP.* Potential to emit of any HAP from any single emissions unit shall not exceed 1,000 lb per year or the de minimis level established under section 112(g) of the Act, whichever is less.

(d) Any application form, report, or compliance certification submitted pursuant to these regulations shall contain certification by a responsible official of truth, accuracy, and completeness. This certification and any other certification required under this part shall state that, based on informa-

tion and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.

#### § 71.6 Permit content.

(a) *Standard permit requirements.* Each permit issued under this part shall include the following elements:

(1) Emission limitations and standards, including those operational requirements and limitations that assure compliance with all applicable requirements at the time of permit issuance.

(i) The permit shall specify and reference the origin of and authority for each term or condition, and identify any difference in form as compared to the applicable requirement upon which the term or condition is based.

(ii) The permit shall state that, where an applicable requirement of the Act is more stringent than an applicable requirement of 40 CFR parts 72 through 78, both provisions shall be incorporated into the permit and shall be enforceable by the Administrator.

(iii) If an applicable implementation plan allows a determination of an alternative emission limit at a part 71 source, equivalent to that contained in the plan, to be made in the permit issuance, renewal, or significant modification process, and the permitting authority elects to use such process, any permit containing such equivalency determination shall contain provisions to ensure that any resulting emissions limit has been demonstrated to be quantifiable, accountable, enforceable, and based on replicable procedures.

(2) *Permit duration.* The permitting authority shall issue permits for a fixed term of 5 years in the case of affected sources, and for a term not to exceed 5 years in the case of all other sources. Notwithstanding this requirement, the permitting authority shall issue permits for solid waste incineration units combusting municipal waste subject to standards under section 129(e) of the Act for a period not to exceed 12 years and shall review such permits at least every 5 years.

(3) *Monitoring and related record-keeping and reporting requirements.* (i) Each permit shall contain the following requirements with respect to monitoring:

(A) All emissions monitoring and analysis procedures or test methods required under the applicable requirements, including any procedures and methods promulgated pursuant to sections 114(a)(3) or 504(b) of the Act;

(B) Where the applicable requirement does not require periodic testing or instrumental or noninstrumental monitoring (which may consist of recordkeeping designed to serve as monitoring), periodic monitoring sufficient to yield reliable data from the relevant time period that are representative of the source's compliance with the permit, as reported pursuant to paragraph (a)(3)(iii) of this section. Such monitoring requirements shall assure use of terms, test methods, units, averaging periods, and other statistical conventions consistent with the applicable requirement. Recordkeeping provisions may be sufficient to meet the requirements of this paragraph (a)(3)(i)(B); and

(C) As necessary, requirements concerning the use, maintenance, and, where appropriate, installation of monitoring equipment or methods.

(ii) With respect to recordkeeping, the permit shall incorporate all applicable recordkeeping requirements and require, where applicable, the following:

(A) Records of required monitoring information that include the following:

(1) The date, place as defined in the permit, and time of sampling or measurements;

(2) The date(s) analyses were performed;

(3) The company or entity that performed the analyses;

(4) The analytical techniques or methods used;

(5) The results of such analyses; and

(6) The operating conditions as existing at the time of sampling or measurement;

(B) Retention of records of all required monitoring data and support information for a period of at least 5 years from the date of the monitoring sample, measurement, report, or application. Support information includes all calibration and maintenance records and all original strip-chart recordings for continuous monitoring in-

strumentation, and copies of all reports required by the permit.

(iii) With respect to reporting, the permit shall incorporate all applicable reporting requirements and require the following:

(A) Submittal of reports of any required monitoring at least every 6 months. All instances of deviations from permit requirements must be clearly identified in such reports. All required reports must be certified by a responsible official consistent with § 71.5(d).

(B) Prompt reporting of deviations from permit requirements, including those attributable to upset conditions as defined in the permit, the probable cause of such deviations, and any corrective actions or preventive measures taken. Where the underlying applicable requirement contains a definition of prompt or otherwise specifies a time frame for reporting deviations, that definition or time frame shall govern. Where the underlying applicable requirement fails to address the time frame for reporting deviations, reports of deviations shall be submitted to the permitting authority based on the following schedule:

(1) For emissions of a hazardous air pollutant or a toxic air pollutant (as identified in an applicable regulation) that continue for more than an hour in excess of permit requirements, the report must be made with 24 hours of the occurrence.

(2) For emissions of any regulated air pollutant, excluding those listed in paragraph (a)(3)(iii)(B)(1) of this section, that continue for more than two hours in excess of permit requirements, the report must be made within 48 hours.

(3) For all other deviations from permit requirements, the report shall be contained in the report submitted in accordance with the timeframe given in paragraph (a)(3)(iii)(A).

(4) A permit may contain a more stringent reporting requirement than required by paragraphs (a)(3)(iii)(B)(1), (2), or (3).

If any of the above conditions are met, the source must notify the permitting authority by telephone or facsimile based on the timetable listed in paragraphs (a)(3)(iii)(B) (1) through (4)

of this section. A written notice, certified consistent with § 71.5(d), must be submitted within 10 working days of the occurrence. All deviations reported under paragraph (a)(3)(iii)(A) of this section must also be identified in the 6 month report required under paragraph (a)(3)(iii)(A) of this section.

(C) For purposes of paragraph (a)(3)(iii)(B) of this section, deviation means any condition determined by observation, by data from any monitoring protocol, or by any other monitoring which is required by the permit that can be used to determine compliance, that identifies that an emission unit subject to a part 71 permit term or condition has failed to meet an applicable emission limitation or standard or that a work practice was not complied with or completed. For a condition lasting more than 24 hours which constitutes a deviation, each 24 hour period is considered a separate deviation. Included in the meaning of deviation are any of the following:

(1) A condition where emissions exceed an emission limitation or standard;

(2) A condition where process or control device parameter values demonstrate that an emission limitation or standard has not been met;

(3) Any other condition in which observations or data collected demonstrates noncompliance with an emission limitation or standard or any work practice or operating condition required by the permit.

(4) A permit condition prohibiting emissions exceeding any allowances that the source lawfully holds under 40 CFR parts 72 through 78.

(i) No permit revision shall be required for increases in emissions that are authorized by allowances acquired pursuant to the acid rain program, provided that such increases do not require a permit revision under any other applicable requirement.

(ii) No limit shall be placed on the number of allowances held by the source. The source may not, however, use allowances as a defense to non-compliance with any other applicable requirement.

(iii) Any such allowance shall be accounted for according to the proce-

dures established in regulations 40 CFR parts 72 through 78.

(5) A severability clause to ensure the continued validity of the various permit requirements in the event of a challenge to any portions of the permit.

(6) Provisions stating the following:

(i) The permittee must comply with all conditions of the part 71 permit. Any permit noncompliance constitutes a violation of the Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application.

(ii) Need to halt or reduce activity not a defense. It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

(iii) The permit may be modified, revoked, reopened, and reissued, or terminated for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or of a notification of planned changes or anticipated noncompliance does not stay any permit condition.

(iv) The permit does not convey any property rights of any sort, or any exclusive privilege.

(v) The permittee shall furnish to the permitting authority, within a reasonable time, any information that the permitting authority may request in writing to determine whether cause exists for modifying, revoking and reissuing, or terminating the permit or to determine compliance with the permit. Upon request, the permittee shall also furnish to the permitting authority copies of records required to be kept by the permit or, in the case of a program delegated pursuant to § 71.10, for information claimed to be confidential, the permittee may furnish such records directly to the Administrator along with a claim of confidentiality.

(7) A provision to ensure that a part 71 source pays fees to the Administrator consistent with the fee schedule approved pursuant to § 71.9.

(8) *Emissions trading.* A provision stating that no permit revision shall be required, under any approved economic

incentives, marketable permits, emissions trading and other similar programs or processes for changes that are provided for in the permit.

(9) Terms and conditions for reasonably anticipated operating scenarios identified by the source in its application as approved by the permitting authority. Such terms and conditions:

(i) Shall require the source, contemporaneously with making a change from one operating scenario to another, to record in a log at the permitted facility a record of the scenario under which it is operating;

(ii) May extend the permit shield described in paragraph (f) of this section to all terms and conditions under each such operating scenario; and

(iii) Must ensure that the terms and conditions of each such alternative scenario meet all applicable requirements and the requirements of this part.

(10) Terms and conditions, if the permit applicant requests them, for the trading of emissions increases and decreases in the permitted facility, to the extent that the applicable requirements provide for trading such increases and decreases without a case-by-case approval of each emissions trade. Such terms and conditions:

(i) Shall include all terms required under paragraphs (a) and (c) of this section to determine compliance;

(ii) May extend the permit shield described in paragraph (f) of this section to all terms and conditions that allow such increases and decreases in emissions; and

(iii) Must meet all applicable requirements and requirements of this part.

(11) *Permit expiration.* A provision to ensure that a part 71 permit expires upon the earlier occurrence of the following events:

(i) twelve years elapses from the date of issuance to a solid waste incineration unit combusting municipal waste subject to standards under section 112(e) of the Act; or

(ii) five years elapses from the date of issuance; or

(iii) the source is issued a part 70 permit.

(12) *Off Permit Changes.* A provision allowing changes that are not addressed or prohibited by the permit, other than those subject to the require-

ments of 40 CFR parts 72 through 78 or those that are modifications under any provision of title I of the Act to be made without a permit revision, provided that the following requirements are met:

(i) Each such change shall meet all applicable requirements and shall not violate any existing permit term or condition;

(ii) Sources must provide contemporaneous written notice to the permitting authority (and EPA, in the case of a program delegated pursuant to § 71.10) of each such change, except for changes that qualify as insignificant under § 71.5(c)(11). Such written notice shall describe each such change, including the date, any change in emissions, pollutants emitted, and any applicable requirement that would apply as a result of the change;

(iii) The change shall not qualify for the shield under § 71.6(f);

(iv) The permittee shall keep a record describing changes made at the source that result in emissions of a regulated air pollutant subject to an applicable requirement, but not otherwise regulated under the permit, and the emissions resulting from those changes.

(13) *Operational flexibility.* Provisions consistent with paragraphs (a)(3)(i) through (iii) of this section to allow changes within a permitted facility without requiring a permit revision, if the changes are not modifications under any provision of title I of the Act and the changes do not exceed the emissions allowable under the permit (whether expressed therein as a rate of emissions or in terms of total emissions): Provided, that the facility provides the Administrator (in the case of a program delegated pursuant to § 71.10) and the permitting authority with written notification as required below in advance of the proposed changes, which shall be a minimum of 7 days.

(i) The permit shall allow the permitted source to make section 502(b)(10) changes without requiring a permit revision, if the changes are not modifications under any provision of title I of the Act and the changes do not exceed the emissions allowable under the permit (whether expressed

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therein as a rate of emissions or in terms of total emissions).

(A) For each such change, the written notification required above shall include a brief description of the change within the permitted facility, the date on which the change will occur, any change in emissions, and any permit term or condition that is no longer applicable as a result of the change.

(B) The permit shield described in § 71.6(f) shall not apply to any change made pursuant to this paragraph (a)(13)(i).

(ii) The permit may provide for the permitted source to trade increases and decreases in emissions in the permitted facility, where the applicable implementation plan provides for such emissions trades without requiring a permit revision and based on the 7-day notice prescribed in this paragraph (a)(13)(ii) of this section. This provision is available in those cases where the permit does not already provide for such emissions trading.

(A) Under this paragraph (a)(13)(ii), the written notification required above shall include such information as may be required by the provision in the applicable implementation plan authorizing the emissions trade, including at a minimum, when the proposed change will occur, a description of each such change, any change in emissions, the permit requirements with which the source will comply using the emissions trading provisions of the applicable implementation plan, and the pollutants emitted subject to the emissions trade. The notice shall also refer to the provisions with which the source will comply in the applicable implementation plan and that provide for the emissions trade.

(B) The permit shield described in § 71.6(f) shall not extend to any change made under this paragraph (a)(13)(ii). Compliance with the permit requirements that the source will meet using the emissions trade shall be determined according to requirements of the applicable implementation plan authorizing the emissions trade.

(iii) The permit shall require the permitting authority, if a permit applicant requests it, to issue permits that contain terms and conditions, includ-

ing all terms required under § 71.6 (a) and (c) to determine compliance, allowing for the trading of emissions increases and decreases in the permitted facility solely for the purpose of complying with a federally-enforceable emissions cap that is established in the permit independent of otherwise applicable requirements. The permit applicant shall include in its application proposed replicable procedures and permit terms that ensure the emissions trades are quantifiable and enforceable. The permitting authority shall not be required to include in the emissions trading provisions any emissions units for which emissions are not quantifiable or for which there are no replicable procedures to enforce the emissions trades. The permit shall also require compliance with all applicable requirements.

(A) Under this paragraph (a)(13)(iii), the written notification required above shall state when the change will occur and shall describe the changes in emissions that will result and how these increases and decreases in emissions will comply with the terms and conditions of the permit.

(B) The permit shield described in § 71.6(f) may extend to terms and conditions that allow such increases and decreases in emissions.

(b) *Federally-enforceable requirements.* All terms and conditions in a part 71 permit, including any provisions designed to limit a source's potential to emit, are enforceable by the Administrator and citizens under the Act.

(c) *Compliance requirements.* All part 71 permits shall contain the following elements with respect to compliance:

(1) Consistent with paragraph (a)(3) of this section, compliance certification, testing, monitoring, reporting, and recordkeeping requirements sufficient to assure compliance with the terms and conditions of the permit. Any document (including reports) required by a part 71 permit shall contain a certification by a responsible official that meets the requirements of § 71.5(d).

(2) Inspection and entry requirements that require that, upon presentation of credentials and other documents as may be required by law, the permittee shall allow the permitting authority or

an authorized representative to perform the following:

(i) Enter upon the permittee's premises where a part 71 source is located or emissions-related activity is conducted, or where records must be kept under the conditions of the permit;

(ii) Have access to and copy, at reasonable times, any records that must be kept under the conditions of the permit;

(iii) Inspect at reasonable times any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under the permit; and

(iv) As authorized by the Act, sample or monitor at reasonable times substances or parameters for the purpose of assuring compliance with the permit or applicable requirements.

(3) A schedule of compliance consistent with § 71.5(c)(8).

(4) Progress reports consistent with an applicable schedule of compliance and § 71.5(c)(8) to be submitted at least semiannually, or at a more frequent period if specified in the applicable requirement or by the permitting authority. Such progress reports shall contain the following:

(i) Dates for achieving the activities, milestones, or compliance required in the schedule of compliance, and dates when such activities, milestones or compliance were achieved; and

(ii) An explanation of why any dates in the schedule of compliance were not or will not be met, and any preventive or corrective measures adopted.

(5) Requirements for compliance certification with terms and conditions contained in the permit, including emission limitations, standards, or work practices. Permits shall include each of the following:

(i) The frequency (not less than annually or such more frequent periods as specified in the applicable requirement or by the permitting authority) of submissions of compliance certifications;

(ii) In accordance with § 71.6(a)(3), a means for monitoring the compliance of the source with its emissions limitations, standards, and work practices;

(iii) A requirement that the compliance certification include the following:

(A) The identification of each term or condition of the permit that is the basis of the certification;

(B) The compliance status;

(C) Whether compliance was continuous or intermittent;

(D) The method(s) used for determining the compliance status of the source, currently and over the reporting period consistent with paragraph (a)(3) of this section; and

(E) Such other facts as the permitting authority may require to determine the compliance status of the source;

(iv) A requirement that all compliance certifications be submitted to the Administrator as well as to the permitting authority; and

(v) Such additional requirements as may be specified pursuant to sections 114(a)(3) and 504(b) of the Act.

(6) Such other provisions as the permitting authority may require.

(d) *General permits.* (1) The permitting authority may, after notice and opportunity for public participation provided under § 71.11, issue a general permit covering numerous similar sources. Any general permit shall comply with all requirements applicable to other part 71 permits and shall identify criteria by which sources may qualify for the general permit. To sources that qualify, the permitting authority shall grant the conditions and terms of the general permit. Notwithstanding the shield provisions of paragraph (f) of this section, the source shall be subject to enforcement action for operation without a part 71 permit if the source is later determined not to qualify for the conditions and terms of the general permit. General permits shall not be authorized for affected sources under the acid rain program unless otherwise provided in 40 CFR parts 72 through 78.

(2) Part 71 sources that would qualify for a general permit must apply to the permitting authority for coverage under the terms of the general permit or must apply for a part 71 permit consistent with § 71.5. The permitting authority may, in the general permit, provide for applications which deviate from the requirements of § 71.5, provided that such applications meet the requirements of title V of the Act, and include all information necessary to

determine qualification for, and to assure compliance with, the general permit. Without repeating the public participation procedures required under § 71.11, the permitting authority may grant a source's request for authorization to operate under a general permit, but such a grant shall not be a final permit action for purposes of judicial review.

(e) *Temporary sources.* The permitting authority may issue a single permit authorizing emissions from similar operations by the same source owner or operator at multiple temporary locations. The operation must be temporary and involve at least one change of location during the term of the permit. No affected source shall be permitted as a temporary source. Permits for temporary sources shall include the following:

(1) Conditions that will assure compliance with all applicable requirements at all authorized locations;

(2) Requirements that the owner or operator notify the permitting authority at least 10 days in advance of each change in location; and

(3) Conditions that assure compliance with all other provisions of this section.

(f) *Permit shield.* (1) Except as provided in this part, the permitting authority may expressly include in a part 71 permit a provision stating that compliance with the conditions of the permit shall be deemed compliance with any applicable requirements as of the date of permit issuance, provided that:

(i) Such applicable requirements are included and are specifically identified in the permit; or

(ii) The permitting authority, in acting on the permit application or revision, determines in writing that other requirements specifically identified are not applicable to the source, and the permit includes the determination or a concise summary thereof.

(2) A part 71 permit that does not expressly state that a permit shield exists shall be presumed not to provide such a shield.

(3) Nothing in this paragraph or in any part 71 permit shall alter or affect the following:

(i) The provisions of section 303 of the Act (emergency orders), including the

authority of the Administrator under that section;

(ii) The liability of an owner or operator of a source for any violation of applicable requirements prior to or at the time of permit issuance;

(iii) The applicable requirements of the acid rain program, consistent with section 408(a) of the Act; or

(iv) The ability of EPA to obtain information from a source pursuant to section 114 of the Act.

(g) *Emergency provision.* (1) *Definition.* An "emergency" means any situation arising from sudden and reasonably unforeseeable events beyond the control of the source, including acts of God, which situation requires immediate corrective action to restore normal operation, and that causes the source to exceed a technology-based emission limitation under the permit, due to unavoidable increases in emissions attributable to the emergency. An emergency shall not include noncompliance to the extent caused by improperly designed equipment, lack of preventative maintenance, careless or improper operation, or operator error.

(2) *Effect of an emergency.* An emergency constitutes an affirmative defense to an action brought for noncompliance with such technology-based emission limitations if the conditions of paragraph (g)(3) of this section are met.

(3) The affirmative defense of emergency shall be demonstrated through properly signed, contemporaneous operating logs, or other relevant evidence that:

(i) An emergency occurred and that the permittee can identify the cause(s) of the emergency;

(ii) The permitted facility was at the time being properly operated;

(iii) During the period of the emergency the permittee took all reasonable steps to minimize levels of emissions that exceeded the emission standards, or other requirements in the permit; and

(iv) The permittee submitted notice of the emergency to the permitting authority within 2 working days of the time when emission limitations were exceeded due to the emergency. This notice fulfills the requirement of paragraph (a)(3)(iii)(B) of this section. This

notice must contain a description of the emergency, any steps taken to mitigate emissions, and corrective actions taken.

(4) In any enforcement proceeding, the permittee seeking to establish the occurrence of an emergency has the burden of proof.

(5) This provision is in addition to any emergency or upset provision contained in any applicable requirement.

**§ 71.7 Permit issuance, renewal, reopenings, and revisions.**

(a) *Action on application.* (1) A permit, permit modification, or renewal may be issued only if all of the following conditions have been met:

(i) The permitting authority has received a complete application for a permit, permit modification, or permit renewal, except that a complete application need not be received before issuance of a general permit under § 71.6(d);

(ii) Except for modifications qualifying for minor permit modification procedures under paragraphs (e) (1) and (2) of this section, the permitting authority has complied with the requirements for public participation under this section or § 71.11, as applicable;

(iii) The permitting authority has complied with the requirements for notifying and responding to affected States under § 71.8(a);

(iv) The conditions of the permit provide for compliance with all applicable requirements and the requirements of this part; and

(v) In the case of a program delegated pursuant to § 71.10, the Administrator has received a copy of the proposed permit and any notices required under § 71.10(d) and has not objected to issuance of the permit under § 71.10(g) within the time period specified therein.

(2) Except as provided under the initial transition plan provided for under § 71.4(i) or under 40 CFR part 72 or title V of the Act for the permitting of affected sources under the acid rain program, the permitting authority shall take final action on each permit application (including a request for permit modification or renewal) within 18 months after receiving a complete application.

(3) The permitting authority shall ensure that priority is given to taking

action on applications for construction or modification under title I, parts C and D of the Act.

(4) The permitting authority shall promptly provide notice to the applicant of whether the application is complete. Unless the permitting authority requests additional information or otherwise notifies the applicant of incompleteness within 60 days of receipt of an application, the application shall be deemed complete. For modifications processed through minor permit modification procedures, such as those in paragraphs (e) (1) and (2) of this section, the permitting authority need not make a completeness determination.

(5) The permitting authority shall provide a statement that sets forth the legal and factual basis for the draft permit conditions (including references to the applicable statutory or regulatory provisions). The permitting authority shall send this statement to any person who requests it, and to EPA, in the case of a program delegated pursuant to § 71.10.

(6) The submittal of a complete application shall not affect the requirement that any source have a preconstruction permit under title I of the Act.

(b) *Requirement for a permit.* Except as provided in the following sentence, § 71.6(a)(13), and paragraphs (e)(1)(v) and e(2)(v) of this section, no part 71 source may operate after the time that it is required to submit a timely and complete application under this part, except in compliance with a permit issued under this part. If a part 71 source submits a timely and complete application for permit issuance (including for renewal), the source's failure to have a part 71 permit is not a violation of this part until the permitting authority takes final action on the permit application, except as noted in this section. This protection shall cease to apply if, subsequent to the completeness determination made pursuant to paragraph (a)(4) of this section, and as required by § 71.5(c), the applicant fails to submit by the deadline specified in writing by the permitting authority any additional information identified as being needed to process the application.

(c) *Permit renewal and expiration.* (1) (i) Permits being renewed are subject to the same procedural requirements,

including those for public participation, affected State review, and EPA review (in the case of a program delegated pursuant to § 71.10) that apply to initial permit issuance.

(ii) Permit expiration terminates the source's right to operate unless a timely and complete renewal application has been submitted consistent with paragraph (b) of this section and § 71.5(a)(1)(iii).

(2) In the case of a program delegated pursuant to § 71.10, if the permitting authority fails to act in a timely way on permit renewal, EPA may invoke its authority under section 505(e) of the Act to terminate or revoke and reissue the permit.

(3) If a timely and complete application for a permit renewal is submitted, consistent with § 71.5(a)(2), but the permitting authority has failed to issue or deny the renewal permit before the end of the term of the previous part 70 or 71 permit, then the permit shall not expire until the renewal permit has been issued or denied and any permit shield that may be granted pursuant to § 71.6(f) may extend beyond the original permit term until renewal; or all the terms and conditions of the permit including any permit shield that may be granted pursuant to § 71.6(f) shall remain in effect until the renewal permit has been issued or denied.

(d) *Administrative permit amendments.*

(1) An "administrative permit amendment" is a permit revision that:

- (i) Corrects typographical errors;
- (ii) Identifies a change in the name, address, or phone number of any person identified in the permit, or provides a similar minor administrative change at the source;
- (iii) Requires more frequent monitoring or reporting by the permittee;
- (iv) Allows for a change in ownership or operational control of a source where the permitting authority determines that no other change in the permit is necessary, provided that a written agreement containing a specific date for transfer of permit responsibility, coverage, and liability between the current and new permittee has been submitted to the permitting authority;
- (v) Incorporates into the part 71 permit the requirements from preconstruction review permits author-

ized under an EPA-approved program, provided that such a program meets procedural requirements substantially equivalent to the requirements of §§ 71.7 and 71.8 (and § 71.10 in the case of a delegated program) that would be applicable to the change if it were subject to review as a permit modification, and compliance requirements substantially equivalent to those contained in § 71.6; or

(vi) Incorporates any other type of change which the Administrator has determined to be similar to those in paragraphs (d)(1)(i) through (iv) of this section.

(2) Administrative permit amendments for purposes of the acid rain portion of the permit shall be governed by 40 CFR part 72.

(3) *Administrative permit amendment procedures.* An administrative permit amendment may be made by the permitting authority consistent with the following:

(i) The permitting authority shall take no more than 60 days from receipt of a request for an administrative permit amendment to take final action on such request, and may incorporate such changes without providing notice to the public or affected States provided that it designates any such permit revisions as having been made pursuant to this paragraph.

(ii) The permitting authority shall submit a copy of the revised permit to the Administrator in the case of a program delegated pursuant to § 71.10.

(iii) The source may implement the changes addressed in the request for an administrative amendment immediately upon submittal of the request.

(4) The permitting authority may, upon taking final action granting a request for an administrative permit amendment, allow coverage by the permit shield in § 71.6(f) for administrative permit amendments made pursuant to paragraph (d)(1)(v) of this section which meet the relevant requirements of §§ 71.6, 71.7, and 71.8 for significant permit modifications.

(e) *Permit modifications.* A permit modification is any revision to a part 71 permit that cannot be accomplished under the provisions for administrative permit amendments under paragraph

(d) of this section. A permit modification for purposes of the acid rain portion of the permit shall be governed by 40 CFR part 72.

(1) *Minor permit modification procedures.*

(i) Criteria.

(A) Minor permit modification procedures may be used only for those permit modifications that:

(1) Do not violate any applicable requirement;

(2) Do not involve significant changes to existing monitoring, reporting, or recordkeeping requirements in the permit;

(3) Do not require or change a case-by-case determination of an emission limitation or other standard, or a source-specific determination for temporary sources of ambient impacts, or a visibility or increment analysis;

(4) Do not seek to establish or change a permit term or condition for which there is no corresponding underlying applicable requirement and that the source has assumed to avoid an applicable requirement to which the source would otherwise be subject. Such terms and conditions include:

(i) A federally enforceable emissions cap assumed to avoid classification as a modification under any provision of title I; and

(ii) An alternative emissions limit approved pursuant to regulations promulgated under section 112(i)(5) of the Act;

(5) Are not modifications under any provision of title I of the Act; and

(6) Are not required to be processed as a significant modification.

(B) Notwithstanding paragraphs (e)(1)(i)(A) and (e)(2)(i) of this section, minor permit modification procedures may be used for permit modifications involving the use of economic incentives, marketable permits, emissions trading, and other similar approaches, to the extent that such minor permit modification procedures are explicitly provided for in an applicable implementation plan or in applicable requirements promulgated by EPA.

(ii) *Application.* An application requesting the use of minor permit modification procedures shall meet the requirements of § 71.5(c) and shall include the following:

(A) A description of the change, the emissions resulting from the change, and any new applicable requirements that will apply if the change occurs;

(B) The source's suggested draft permit;

(C) Certification by a responsible official, consistent with § 71.5(d), that the proposed modification meets the criteria for use of minor permit modification procedures and a request that such procedures be used; and

(D) Completed forms for the permitting authority to use to notify affected States (and the Administrator in the case of a program delegated pursuant to § 71.10) as required under §§ 71.8 and 71.10(d).

(iii) *EPA and affected State notification.* Within 5 working days of receipt of a complete permit modification application, the permitting authority shall meet its obligation under § 71.8(a) to notify affected States (and its obligation under § 71.10(d) to notify the Administrator in the case of a program delegated pursuant to § 71.10) of the requested permit modification. In the case of a program delegated pursuant to § 71.10, the permitting authority promptly shall send any notice required under § 71.8(b) to the Administrator.

(iv) *Timetable for issuance.* In the case of a program delegated pursuant to § 71.10, the permitting authority may not issue a final permit modification until after EPA's 45-day review period or until EPA has notified the permitting authority that EPA will not object to issuance of the permit modification, whichever is first, although the permitting authority can approve the permit modification prior to that time. Within 90 days of the permitting authority's receipt of an application under minor permit modification procedures (or 15 days after the end of the Administrator's 45-day review period under § 71.10(g) in the case of a program delegated pursuant to § 71.10, whichever is later), the permitting authority shall:

(A) Issue the permit modification as proposed;

(B) Deny the permit modification application;

(C) Determine that the requested modification does not meet the minor

permit modification criteria and should be reviewed under the significant modification procedures; or

(D) Revise the draft permit modification (and, in the case of a program delegated pursuant to § 71.10, transmit to the Administrator the new proposed permit modification as required by § 71.10(d)).

(v) *Source's ability to make change.* The source may make the change proposed in its minor permit modification application immediately after it files such application. After the source makes the change allowed by the preceding sentence, and until the permitting authority takes any of the actions specified in paragraphs (e)(1)(iv) (A) through (C) of this section, the source must comply with both the applicable requirements governing the change and the proposed permit terms and conditions. During this time period, the source need not comply with the existing permit terms and conditions it seeks to modify. However, if the source fails to comply with its proposed permit terms and conditions during this time period, the existing permit terms and conditions it seeks to modify may be enforced against it.

(vi) *Permit shield.* The permit shield under § 71.6(f) may not extend to minor permit modifications.

(2) *Group processing of minor permit modifications.* Consistent with this paragraph, the permitting authority may modify the procedure outlined in paragraph (e)(1) of this section to process groups of a source's applications for certain modifications eligible for minor permit modification processing.

(i) *Criteria.* Group processing of modifications may be used only for those permit modifications:

(A) That meet the criteria for minor permit modification procedures under paragraph (e)(1)(i)(A) of this section; and

(B) That collectively are below the threshold level of 10 percent of the emissions allowed by the permit for the emissions unit for which the change is requested, 20 percent of the applicable definition of major source in § 71.2, or 5 tpy, whichever is least.

(ii) *Application.* An application requesting the use of group processing procedures shall meet the requirements

of § 71.5(c) and shall include the following:

(A) A description of the change, the emissions resulting from the change, and any new applicable requirements that will apply if the change occurs.

(B) The source's suggested draft permit.

(C) Certification by a responsible official, consistent with § 71.5(d), that the proposed modification meets the criteria for use of group processing procedures and a request that such procedures be used.

(D) A list of the source's other pending applications awaiting group processing, and a determination of whether the requested modification, aggregated with these other applications, equals or exceeds the threshold set under paragraph (e)(2)(i)(B) of this section.

(E) Certification, consistent with § 71.5(d), that, in the case of a program delegated pursuant to § 71.10, the source has notified EPA of the proposed modification. Such notification need only contain a brief description of the requested modification.

(F) Completed forms for the permitting authority to use to notify affected States as required under § 71.8 (and the Administrator as required under § 71.10(d) in the case of a program delegated pursuant to § 71.10).

(iii) *EPA and affected State notification.* On a quarterly basis or within 5 business days of receipt of an application demonstrating that the aggregate of a source's pending applications equals or exceeds the threshold level set under paragraph (e)(2)(i)(B) of this section, whichever is earlier, the permitting authority promptly shall meet its obligation under § 71.8(a) to notify affected States (and its obligation under § 71.10(d) to notify EPA in the case of a program delegated pursuant to § 71.10) of the requested permit modification. The permitting authority shall send any notice required under § 71.8(b) to the Administrator in the case of a program delegated pursuant to § 71.10.

(iv) *Timetable for issuance.* The provisions of paragraph (e)(1)(iv) of this section shall apply to modifications eligible for group processing, except that the permitting authority shall take

one of the actions specified in paragraphs (e)(1)(iv) (A) through (D) of this section within 180 days of receipt of the application (or, in the case of a program delegated pursuant to § 71.10, 15 days after the end of the Administrator's 45-day review period under § 71.10(g), whichever is later).

(v) *Source's ability to make change.* The provisions of paragraph (e)(1)(v) of this section shall apply to modifications eligible for group processing.

(vi) *Permit shield.* The provisions of paragraph (e)(1)(vi) of this section shall also apply to modifications eligible for group processing.

(3) *Significant modification procedures—(i) Criteria.* Significant modification procedures shall be used for applications requesting permit modifications that do not qualify as minor permit modifications or as administrative amendments. Every significant change in existing monitoring permit terms or conditions and every relaxation of reporting or recordkeeping permit terms or conditions shall be considered significant. Nothing herein shall be construed to preclude the permittee from making changes consistent with this part that would render existing permit compliance terms and conditions irrelevant.

(ii) Significant permit modifications shall meet all requirements of this part, including those for applications, public participation, review by affected States, and review by EPA (in the case of a program delegated pursuant to § 71.10), as they apply to permit issuance and permit renewal. The permitting authority shall design and implement this review process to complete review on the majority of significant permit modifications within 9 months after receipt of a complete application.

(f) *Reopening for cause.* (1) Each issued permit shall include provisions specifying the conditions under which the permit will be reopened prior to the expiration of the permit. A permit shall be reopened and revised under any of the following circumstances:

(i) Additional applicable requirements under the Act become applicable to a major part 71 source with a remaining permit term of 3 or more years. Such a reopening shall be completed not later than 18 months after

promulgation of the applicable requirement. No such reopening is required if the effective date of the requirement is later than the date on which the permit is due to expire, unless the original permit or any of its terms and conditions have been extended pursuant to paragraph (c)(3) of this section.

(ii) Additional requirements (including excess emissions requirements) become applicable to an affected source under the acid rain program. Upon approval by the Administrator, excess emissions offset plans shall be deemed to be incorporated into the permit.

(iii) The permitting authority (or EPA, in the case of a program delegated pursuant to § 71.10) determines that the permit contains a material mistake or that inaccurate statements were made in establishing the emissions standards or other terms or conditions of the permit.

(iv) The permitting authority (or EPA, in the case of a program delegated pursuant to § 71.10) determines that the permit must be revised or revoked to assure compliance with the applicable requirements.

(2) Proceedings to reopen and issue a permit shall follow the same procedures as apply to initial permit issuance and shall affect only those parts of the permit for which cause to reopen exists, and shall be made as expeditiously as practicable.

(3) Reopenings under paragraph (f)(1) of this section shall not be initiated before a notice of such intent is provided to the part 71 source by the permitting authority at least 30 days in advance of the date that the permit is to be reopened, except that the permitting authority may provide a shorter time period in the case of an emergency.

(g) *Reopenings for cause by EPA for delegated programs.* (1) In the case of a program delegated pursuant to § 71.10, if the Administrator finds that cause exists to terminate, modify, or revoke and reissue a permit pursuant to paragraph (f) of this section, the Administrator will notify the permitting authority and the permittee of such finding in writing.

(2) The permitting authority shall, within 90 days after receipt of such notification, forward to EPA a proposed

determination of termination, modification, or revocation and reissuance, as appropriate. The Administrator may extend this 90-day period for an additional 90 days if he or she finds that a new or revised permit application is necessary or that the permitting authority must require the permittee to submit additional information.

(3) The Administrator will review the proposed determination from the permitting authority within 90 days of receipt.

(4) The permitting authority shall have 90 days from receipt of an EPA objection to resolve any objection that EPA makes and to terminate, modify, or revoke and reissue the permit in accordance with the Administrator's objection.

(5) If the permitting authority fails to submit a proposed determination pursuant to paragraph (g)(2) of this section or fails to resolve any objection pursuant to paragraph (g)(4) of this section, the Administrator will terminate, modify, or revoke and reissue the permit after taking the following actions:

(i) Providing at least 30 days' notice to the permittee in writing of the reasons for any such action. This notice may be given during the procedures in paragraphs (g) (1) through (4) of this section.

(ii) Providing the permittee an opportunity for comment on the Administrator's proposed action and an opportunity for a hearing.

#### § 71.8 Affected State review.

(a) *Notice of draft permits.* When a part 71 operating permits program becomes effective in a State or Tribal area, the permitting authority shall provide notice of each draft permit to any affected State, as defined in § 71.2, on or before the time that the permitting authority provides this notice to the public pursuant to § 71.7 or § 71.11(d) except to the extent § 71.7(e)(1) or (2) requires the timing of the notice to be different.

(b) *Notice of refusal to accept recommendations.* Prior to issuance of the final permit, the permitting authority shall notify any affected State in writing of any refusal by the permitting authority to accept all recommendations for the proposed permit that the affected State submitted during the

public or affected State review period. The notice shall include the permitting authority's reasons for not accepting any such recommendation. The permitting authority is not required to accept recommendations that are not based on applicable requirements or the requirements of this part. In the case of a program delegated pursuant to § 71.10, the permitting authority shall include such notice as part of the submittal of the proposed permit to the Administrator (or as soon as possible after the submittal for minor permit modification procedures allowed under § 71.7(e)(1) or (2)).

(c) *Waiver of notice requirements.* The Administrator may waive the requirements of paragraph (a) of this section for any category of sources (including any class, type, or size within such category) other than major sources by regulation for a category of sources nationwide.

(d) *Notice provided to Indian Tribes.* The permitting authority shall provide notice of each draft permit to any federally recognized Indian Tribe whose air quality may be affected by the permitting action and whose reservation or Tribal area is contiguous to the jurisdiction in which the part 71 permit is proposed or is within 50 miles of the permitted source.

#### § 71.9 Permit fees.

(a) *Fee requirement.* The owners or operators of part 71 sources shall pay annual fees, or the equivalent over some other period, that are sufficient to cover the permit program costs, in accordance with the procedures described in this section.

(b) *Permit program costs.* These costs include, but are not limited to, the costs of the following activities as they relate to a part 71 program:

(1) Reviewing and acting on any application for a permit, permit revision, or permit renewal, including the development of an applicable requirement as part of the processing of a permit, or permit revision or renewal;

(2) Processing permit reopenings;

(3) General administrative costs of the permit program, including transition planning, interagency coordination, contract management, training, informational services and outreach

activities, assessing and collecting fees, the tracking of permit applications, compliance certifications, and related data entry;

(4) Implementing and enforcing the terms of any part 71 permit (not including any court costs or other costs associated with an enforcement action), including adequate resources to determine which sources are subject to the program;

(5) Emissions and ambient monitoring, modeling, analyses, demonstrations, preparation of inventories, and tracking emissions, provided these activities are needed in order to issue and implement part 71 permits; and

(6) Providing direct and indirect support to small business stationary sources in determining applicable requirements and in receiving permits under this part (to the extent that these services are not provided by a State Small Business Stationary Source Technical and Environmental Compliance Assistance Program).

(c) *Establishment of fee schedule.* (1) For part 71 programs that are administered by EPA, each part 71 source shall pay an annual fee in the amount of \$32 per ton (as adjusted pursuant to the criteria set forth in paragraph (n)(1) of this section) times the total tons of the actual emissions of each regulated pollutant (for fee calculation) emitted from the source, including fugitive emissions.

(2) For part 71 programs that are fully delegated pursuant to § 71.10:

(i) Where the EPA has not suspended its part 71 fee collection pursuant to paragraph (c)(2)(ii) of this section, the annual fee for each part 71 source shall be \$24 per ton (as adjusted pursuant to the criteria set forth in paragraph (n)(1) of this section) times the total tons of the actual emissions of each regulated pollutant (for fee calculation) emitted from the source, including fugitive emissions.

(ii) Where the delegate State collects fees from part 71 sources under State law which are sufficient to fund the delegated part 71 program, the EPA may suspend its collection of part 71 fees. The specific terms and conditions regarding the suspension of fee collection will be addressed in the applicable

delegation agreement pursuant to § 71.10.

(3) For part 71 programs that are administered by EPA with contractor assistance, the per ton fee shall vary depending on the extent of contractor involvement and the cost to EPA of contractor assistance. The EPA shall establish a per ton fee that is based on the contractor costs for the specific part 71 program that is being administered, using the following formula:

$$\text{Cost per ton} = (E \times 32) + [(1 - E) \times \$C]$$

Where  $E$  represents EPA's proportion of total effort (expressed as a percentage of total effort) needed to administer the part 71 program,  $1 - E$  represents the contractor's effort, and  $C$  represents the contractor assistance cost on a per ton basis.  $C$  shall be computed by using the following formula:

$$C = [B + T + N] \text{ divided by } 12,300,000$$

Where  $B$  represents the base cost (contractor costs), where  $T$  represents travel costs, and where  $N$  represents non-personnel data management and tracking costs.

(4) For programs that are delegated in part, the fee shall be computed using the following formula:

$$\text{Cost per ton} = (E \times 32) + (D \times 24) + [(1 - E - D) \times \$C]$$

Where  $E$  and  $D$  represent, respectively, the EPA and delegate agency proportions of total effort (expressed as a percentage of total effort) needed to administer the part 71 program,  $1 - E - D$  represents the contractor's effort, and  $C$  represents the contractor assistance cost on a per ton basis.  $C$  shall be computed using the formula for contractor assistance cost found in paragraph (c)(3) of this section and shall be zero if contractor assistance is not utilized.

(5) The following emissions shall be excluded from the calculation of fees under paragraph (c)(1) through (c)(4) of this section:

(i) The amount of a part 71 source's actual emissions of each regulated pollutant (for fee calculation) that the source emits in excess of four thousand (4,000) tpy;

(ii) A part 71 source's actual emissions of any regulated pollutant (for fee calculation) already included in the fee calculation; and

(iii) The insignificant quantities of actual emissions not required to be

listed or calculated in a permit application pursuant to § 71.5(c)(11).

(6) "Actual emissions" means the actual rate of emissions in tpy of any regulated pollutant (for fee calculation) emitted from a part 71 source over the preceding calendar year. Actual emissions shall be calculated using each emissions unit's actual operating hours, production rates, in-place control equipment, and types of materials processed, stored, or combusted during the preceding calendar year.

(7) Notwithstanding the provisions of paragraph (c) (1) through (4) of this section, if the Administrator determines that the fee structures provided in paragraphs (c)(1) through (4) of this section do not reflect the costs of administering a part 71 program, then the Administrator shall by rule set a fee which adequately reflects permit program costs for that program.

(d) *Prohibition on fees with respect to emissions from affected units.* Notwithstanding any other provision of this section, during the years 1995 through 1999 inclusive, no fee for purposes of title V shall be required to be paid with respect to emissions from any affected unit under section 404 of the Act.

(e) *Submission of initial fee calculation work sheets and fees.* (1) Each part 71 source shall complete and submit an initial fee calculation work sheet as provided in paragraphs (e)(2), (f), and (g) of this section and shall complete and submit fee calculation work sheets thereafter as provided in paragraph (h) of this section. Calculations of actual or estimated emissions and calculation of the fees owed by a source shall be computed by the source on fee calculation work sheets provided by EPA. Fee payment of the full amount must accompany each initial fee calculation work sheet.

(2) The fee calculation work sheet shall require the source to submit a report of its actual emissions for the preceding calendar year and to compute fees owed based on those emissions. For sources that have been issued part 70 or part 71 permits, actual emissions shall be computed using compliance methods required by the most recent permit. If actual emissions cannot be determined using the compliance

methods in the permit, the actual emissions should be determined using federally recognized procedures. If a source commenced operation during the preceding calendar year, the source shall estimate its actual emissions for the current calendar year. In such a case, fees for the source shall be based on the total emissions estimated.

(3) The initial fee calculation worksheet shall be certified by a responsible official consistent with § 71.5(d).

(f) *Deadlines for submission.* (1) When EPA withdraws approval of a part 70 program and implements a part 71 program, part 71 sources shall submit initial fee calculation work sheets and fees in accordance with the following schedule:

(i) Sources having SIC codes between 0100 and 2499 inclusive shall complete and submit fee calculation work sheets and fees within 6 months of the effective date of the part 71 program;

(ii) Sources having SIC codes between 2500 and 2999 inclusive shall complete and submit fee calculation work sheets and fees within 7 months of the effective date of the part 71 program;

(iii) Sources having SIC codes between 3000 and 3999 inclusive shall complete and submit fee calculation work sheets and fees within 8 months of the effective date of the part 71 program;

(iv) Sources having SIC codes higher than 3999 shall complete and submit fee calculation work sheets and fees within 9 months of the effective date of the part 71 program.

(2) Sources that are required under either paragraph (f)(1) or (g) of this section to submit fee calculation work sheets and fees between January 1 and March 31 may estimate their emissions for the preceding calendar year in lieu of submitting actual emissions data. If the source's initial fee calculation work sheet was based on estimated emissions for the source's preceding calendar year, then the source shall reconcile the fees owed when it submits its annual emissions report, as provided in paragraph (h)(3) of this section.

(3) When EPA implements a part 71 program that does not replace an approved part 70 program, part 71 sources shall submit initial fee calculation

work sheets and initial fees when submitting their permit applications in accordance with the requirements of § 71.5(a)(1).

(4) Notwithstanding the above, sources that become subject to the part 71 program after the program's effective date shall submit an initial fee calculation work sheet and initial fees when submitting their permit applications in accordance with the requirements of § 71.5(a)(1).

(g) *Fees for sources that are issued part 71 permits following an EPA objection pursuant to § 71.4(e).* Fees for such sources shall be determined as provided in paragraph (c)(1) of this section. However, initial fee calculation work sheets for such sources and full payment of the initial fee shall be due three months after the date on which the source's part 71 permit is issued.

(h) *Annual emissions reports—(1) Deadlines for submission.* Each part 71 source shall submit an annual report of its actual emissions for the preceding calendar year, a fee calculation work sheet (based on the report), and full payment of the annual fee each year on the anniversary date of its initial fee calculation work sheet, except that sources that were required to submit initial fee calculation work sheets between January 1 and March 31 inclusive shall submit subsequent annual emissions reports and fee calculation work sheets by April 1.

(2) Annual emissions reports and fee calculation worksheets shall be certified by a responsible official consistent with § 71.5(d).

(3) For sources that have been issued part 70 or part 71 permits, actual emissions shall be computed using methods required by the most current permit for determining compliance.

(4) If the source's initial fee calculation work sheet was based on estimated emissions for the source's current or preceding calendar year, then the source shall reconcile the fees owed when it submits its annual emissions report. The source shall compare the estimated emissions from the initial work sheet and the actual emissions from the report and shall enter such information on the fee calculation work sheet that accompanies the annual report. The source shall recompute the

initial fee accordingly and shall remit any underpayment with the report and work sheet. The EPA shall credit any overpayment to the source's account.

(i) *Recordkeeping requirements.* Part 71 sources shall retain, in accordance with the provisions of § 71.6(a)(3)(ii), all work sheets and other materials used to determine fee payments. Records shall be retained for 5 years following the year in which the emissions data is submitted.

(j) *Fee assessment errors.* (1) If EPA determines that a source has completed the fee calculation work sheet incorrectly, the permitting authority shall bill the applicant for the corrected fee or credit overpayments to the source's account.

(2) Each source notified by the permitting authority of additional amounts due shall remit full payment within 30 days of receipt of an invoice from the permitting authority.

(3) An owner or operator of a part 71 source who thinks that the assessed fee is in error shall provide a written explanation of the alleged error to the permitting authority along with the assessed fee. The permitting authority shall, within 90 days of receipt of the correspondence, review the data to determine whether the assessed fee was in error. If an error was made, the overpayment shall be credited to the account of the part 71 source.

(k) *Remittance procedure.* (1) Each remittance under this section shall be in United States currency and shall be paid by money order, bank draft, certified check, corporate check, or electronic funds transfer payable to the order of the U.S. Environmental Protection Agency.

(2) Each remittance shall be sent to the Environmental Protection Agency to the address designated on the fee calculation work sheet or the invoice.

(l) *Penalty and interest assessment.* (1) The permitting authority shall assess interest on payments which are received later than the date due. The interest rate shall be the sum of the Federal short-term rate determined by the Secretary of the Treasury in accordance with section 6621(a)(2) of the Internal Revenue Code of 1986, plus 3 percentage points.

(2) The permitting authority shall assess a penalty charge of 50 percent of the fee amount if the fee is not paid within 30 days of the payment due date.

(3) If a source underpays the fee owed, except as provided in paragraph (l)(4) of this section, the permitting authority shall assess a penalty charge of 50 percent on the amount by which the fee was underpaid. Interest shall also be assessed, computed under paragraph (l)(1) of this section, on the amount by which the fee was underpaid.

(4) If a source bases its initial fee calculation on estimated emissions from the source's current or preceding calendar year, as provided under paragraph (h)(4) of this section, and underpays its fee based on an underestimation of these emissions, the permitting authority shall assess a penalty charge of 50 percent on certain of these underpayments, according to the following provisions:

(i) The penalty charge shall be assessed whenever a source's underpayment exceeds the underpayment penalty cutoff established in paragraph (l)(4)(iii) of this section. The penalty amount shall be 50 percent of the portion of the underpayment which is in excess of the underpayment penalty cutoff.

(ii) Where a source is subject to a penalty for underpayment pursuant to paragraph (l)(4)(i) of this section, interest as computed under paragraph (l)(1) of this section shall be assessed on that portion of the underpayment which is in excess of the underpayment penalty cutoff established in paragraph (l)(4)(iii) of this section.

(iii) The underpayment penalty cutoff for a source shall be the sum of the following:

(A) 50 percent of the portion of the initial fee amount which was calculated from estimated emissions of HAP listed pursuant to 112(b) of the Act, and

(B) 20 percent of the portion of initial fee amount which was calculated from estimated emissions of the remainder of the regulated air pollutants (for fee calculation).

(m) *Failure to remit fees.* The permitting authority shall not issue a final permit or permit revision until all fees,

interest and penalties assessed against a source under this section are paid. The initial application of a source shall not be found complete unless the source has paid all fees owed.

(n) *Adjustments of fee schedules.* (1) The fee schedules provided in paragraphs (c) (1) through (4) of this section shall remain in effect until December 31, 1996. Thereafter, the fee schedules shall be changed annually by the percentage, if any, of any annual increase in the Consumer Price Index.

(2) Part 71 permit program costs and fees will be reviewed by the Administrator at least every 2 years, and changes will be made to the fee schedule as necessary to reflect permit program costs.

(3) When changes to a fee schedule are made based on periodic reviews by the Administrator, the changes will be published in the FEDERAL REGISTER.

(o) *Use of revenue.* All fees, penalties, and interest collected under this part shall be deposited in a special fund in the U.S. Treasury, which thereafter shall be available for appropriation, to remain available until expended, subject to appropriation, to carry out the activities required by this part.

#### § 71.10 Delegation of part 71 program.

(a) *Delegation of part 71 program.* The Administrator may delegate, in whole or in part, with or without signature authority, the authority to administer a part 71 operating permits program to a State, eligible Tribe, local, or other non-State agency in accordance with the provisions of this section. In order to be delegated authority to administer a part 71 program, the delegate agency must submit a legal opinion from the Attorney General from the State, or the attorney for the State, local, interstate, or eligible Tribal agency that has independent legal counsel, stating that the laws of the State, locality, interstate compact or Indian Tribe provide adequate authority to carry out all aspects of the delegated program. A Delegation of Authority Agreement (Agreement) shall set forth the terms and conditions of the delegation, shall specify the provisions that the delegate agency shall be authorized to implement, and shall be entered into by the

Administrator and the delegate agency. The Agreement shall become effective upon the date that both the Administrator and the delegate agency have signed the Agreement. Once delegation becomes effective, the delegate agency will be responsible, to the extent specified in the Agreement, for administering the part 71 program for the area subject to the Agreement.

(b) *Publication of Notice of Delegation of Authority Agreement.* The Administrator shall publish a notice in the FEDERAL REGISTER informing the public of any delegation of a portion of the part 71 program to a State, eligible Tribe, or local agency.

(c) *Revision or revocation of Delegation of Authority Agreement.* An Agreement may be modified, amended, or revoked, in part or in whole, by the Administrator after consultation with the delegate agency.

(d) *Transmission of information to the Administrator.* (1) When a part 71 program has been delegated in accordance with the provisions of this section, the delegate agency shall provide to the Administrator a copy of each permit application (including any application for permit modification), each proposed permit, and each final part 71 permit. The applicant may be required by the delegate agency to provide a copy of the permit application (including the compliance plan) directly to the Administrator. Upon agreement with the Administrator, the delegate agency may submit to the Administrator a permit application summary form and any relevant portion of the permit application and compliance plan, in place of the complete permit application and compliance plan. To the extent practicable, the preceding information shall be provided in computer-readable format compatible with EPA's national database management system.

(2) The Administrator may waive the requirements of paragraph (d)(1) of this section for any category of sources (including any class, type, or size within such category) other than major sources by regulation for a category of sources nationwide.

(e) *Retention of records.* The records for each draft, proposed, and final permit, and application for permit renewal or modification shall be kept for

a period of 5 years by the delegate agency. The delegate agency shall also submit to the Administrator such information as the Administrator may reasonably require to ascertain whether the delegate agency is implementing, administering, and enforcing the delegated part 71 program in compliance with the requirements of the Act and of this part.

(f) *Prohibition of default issuance.* (1) For the purposes of Federal law and title V of the Act, when a part 71 program has been delegated in accordance with the provisions of this section, no part 71 permit (including a permit renewal or modification) will be issued until affected States have had an opportunity to review the draft permit as required pursuant to § 71.8(a) and EPA has had an opportunity to review the proposed permit.

(2) To receive delegation of signature authority, the legal opinion submitted by the delegate agency pursuant to paragraph (a) of this section shall certify that no applicable provision of State, local or Tribal law requires that a part 71 permit or renewal be issued after a certain time if the delegate agency has failed to take action on the application (or includes any other similar provision providing for default issuance of a permit), unless EPA has waived such review for EPA and affected States.

(g) *EPA objection.* (1) The Administrator will object to the issuance of any proposed permit determined by the Administrator not to be in compliance with applicable requirements or requirements under this part. No permit for which an application must be transmitted to the Administrator under paragraph (d)(1) of this section shall be issued if the Administrator objects to its issuance in writing within 45 days of receipt of the proposed permit and all necessary supporting information. When a part 71 program has been delegated in accordance with the provisions of this section, failure of the delegate agency to do any of the following shall constitute grounds for an objection by the Administrator:

(i) Comply with paragraph (d) of this section;

(ii) Submit any information necessary to review adequately the proposed permit;

(iii) Process the permit under the procedures required by §§71.7 and 71.11; or

(iv) Comply with the requirements of §71.8(a).

(2) Any EPA objection under paragraph (g)(1) of this section shall include a statement of the Administrator's reason(s) for objection and a description of the terms and conditions that the permit must include to respond to the objection. The Administrator will provide the permit applicant a copy of the objection.

(3) If the delegate agency fails, within 90 days after the date of an objection under paragraph (g)(1) of this section, to revise and submit to the Administrator the proposed permit in response to the objection, the Administrator shall issue or deny the permit in accordance with the requirements of this part.

(h) *Public petitions.* In the case of a delegated program, any interested person may petition the Administrator to reopen a permit for cause as provided in §71.11(n).

(i) *Appeal of permits.* When a part 71 program has been delegated with signature authority in accordance with the provisions of this section, any person or affected State that submitted recommendations or comments on the draft permit, or that participated in the public hearing process may petition the Environmental Appeals Board in accordance with §71.11(l)(1).

(j) *Nondelegable conditions.* (1) The Administrator's authority to object to the issuance of a part 71 permit cannot be delegated to an agency not within EPA.

(2) The Administrator's authority to act upon petitions submitted pursuant to paragraph (h) of this section cannot be delegated to an agency not within EPA.

**§71.11 Administrative record, public participation, and administrative review.**

The provisions of this section shall apply to all permit proceedings. Notwithstanding the preceding sentence, paragraphs (a) through (h) and para-

graph (j) of this section shall not apply to permit revisions qualifying as minor permit modifications or administrative amendments, except that public notice of the granting of appeals of such actions under paragraph (l)(3) of this section shall be provided pursuant to paragraph (d)(1)(i)(E) of this section, and except that affected States shall be provided notice of minor permit modifications under §71.8 as pursuant to paragraph (d)(3)(i)(B) of this section.

(a) *Draft permits.* (1) The permitting authority shall promptly provide notice to the applicant of whether the application is complete pursuant to §71.7(a)(3).

(2) Once an application for an initial permit, permit revision, or permit renewal is complete, the permitting authority shall decide whether to prepare a draft permit or to deny the application.

(3) If the permitting authority initially decides to deny the permit application, it shall issue a notice of intent to deny. A notice of intent to deny the permit application is a type of draft permit and follows the same procedures as any draft permit prepared under this section. If the permitting authority's final decision is that the initial decision to deny the permit application was incorrect, it shall withdraw the notice of intent to deny and proceed to prepare a draft permit under paragraph (a)(4) of this section.

(4) If the permitting authority decides to prepare a draft permit, it shall prepare a draft permit that contains the permit conditions required under §71.6.

(5) All draft permits prepared under this section shall be publicly noticed and made available for public comment.

(b) *Statement of basis.* The permitting authority shall prepare a statement of basis for every draft permit subject to this section. The statement of basis shall briefly describe the derivation of the conditions of the draft permit and the reasons for them or, in the case of notices of intent to deny or terminate, reasons supporting the initial decision. The statement of basis shall be sent to the applicant and, on request, to any other person.

(c) *Administrative record for draft permits.* (1) The provisions of a draft permit shall be based on the administrative record defined in this section.

(2) For preparing a draft permit, the administrative record shall consist of:

- (i) The application and any supporting data furnished by the applicant;
- (ii) The draft permit or notice of intent to deny the application or to terminate the permit;
- (iii) The statement of basis;
- (iv) All documents cited in the statement of basis; and
- (v) Other documents contained in the supporting file for the draft permit.

(3) Material readily available at the permitting authority or published material that is generally available, and that is included in the administrative record under paragraphs (b) and (c) of this section need not be physically included with the rest of the record as long as it is specifically referred to in the statement of basis.

(d) *Public notice of permit actions and public comment period*—(1) *Scope.* (i) The permitting authority shall give public notice that the following actions have occurred:

- (A) A permit application has been initially denied under paragraph (a) of this section;
- (B) A draft permit has been prepared under paragraph (a) of this section;
- (C) A hearing has been scheduled under paragraph (f) of this section; and
- (D) A public comment period has been reopened under paragraph (h) of this section;
- (E) An appeal has been granted under paragraph (l)(3) of this section.

(ii) No public notice is required when a request for permit revision, revocation and reissuance, or termination has been denied under paragraph (a)(2) of this section. Written notice of that denial shall be given to the requester and to the permittee.

(iii) Public notices may describe more than one permit or permit action.

(2) *Timing.* (i) Public notice of the preparation of a draft permit, (including a notice of intent to deny a permit application), shall allow at least 30 days for public comment.

(ii) Public notice of a public hearing shall be given at least 30 days before the hearing. Public notice of the hear-

ing may be given at the same time as public notice of the draft permit and the two notices may be combined.

(iii) The permitting authority shall provide such notice and opportunity for participation to affected States on or before the time that the permitting authority provides this notice to the public.

(3) *Methods.* Public notice of activities described in paragraph (d)(1)(i) of this section shall be given by the following methods:

(i) By mailing a copy of a notice to the following persons (any person otherwise entitled to receive notice under paragraph (d) of this section may waive his or her rights to receive notice for any permit):

- (A) The applicant;
- (B) Affected States;
- (C) Air pollution control agencies of affected States, Tribal and local air pollution control agencies which have jurisdiction over the area in which the source is located, the chief executives of the city and county where the source is located, any comprehensive regional land use planning agency and any State or Federal Land Manager whose lands may be affected by emissions from the source;

(D) The local emergency planning committee having jurisdiction over the area where the source is located, and State agencies having authority under State law with respect to the operation of such source;

(E) Persons on a mailing list developed by:

(1) Including those who request in writing to be on the list;

(2) Soliciting persons for “area lists” from participants in past permit proceedings in that area; and

(3) Notifying the public of the opportunity to be put on the mailing list through periodic publication in the public press and, where deemed appropriate by the permitting authority, in such publications as regional and State funded newsletters, environmental bulletins, or State law journals. The permitting authority may update the mailing list from time to time by requesting written indication of continued interest from those listed. The permitting authority may delete from the

list the name of any person who fails to respond to such a request.

(ii) By publication of a notice in a daily or weekly newspaper of general circulation within the area affected by the source.

(iii) By any other method reasonably calculated to give actual notice of the action in question to the persons potentially affected by it, including press releases or any other forum or medium to elicit public participation.

(4) *Contents*—(i) *All public notices*. All public notices issued under this subpart shall contain the following minimum information:

(A) The name and address of the permitting authority processing the permit;

(B) The name and address of the permittee or permit applicant and, if different, of the facility regulated by the permit, except in the case of draft general permits;

(C) The activity or activities involved in the permit action;

(D) The emissions change involved in any permit revision;

(E) The name, address, and telephone number of a person whom interested persons may contact for instructions on how to obtain additional information, such as a copy of the draft permit, the statement of basis, the application, relevant supporting materials, and other materials available to the permitting authority that are relevant to the permitting decision.

(F) A brief description of the comment procedures required by paragraph (e) of this section, a statement of procedures to request a hearing (unless a hearing has already been scheduled) and other procedures by which the public may participate in the final permit decision;

(G) The location of the administrative record, the times at which the record will be open for public inspection, and a statement that all data submitted by the applicant are available as part of the administrative record; and

(H) Any additional information considered necessary or proper.

(ii) *Public notices for hearings*. Public notice of a hearing may be combined with other notices required under paragraph (d)(1) of this section. Any public

notice of a hearing under paragraph (f) of this section shall contain the following information:

(A) The information described in paragraph (d)(4)(i) of this section;

(B) Reference to the date of previous public notices relating to the permit;

(C) The date, time, and place of the hearing; and

(D) A brief description of the nature and purpose of the hearing, including the applicable rules and the comment procedures.

(5) All persons identified in paragraphs (d)(3)(i) (A), (B), (C), (D), and (E) of this section shall be mailed a copy of the public hearing notice described in paragraph (d)(4)(ii) of this section.

(e) *Public comments and requests for public hearings*. During the public comment period provided under paragraph (a) of this section, any interested person may submit written comments on the draft permit and may request a public hearing, if no hearing has already been scheduled. A request for a public hearing shall be in writing and shall state the nature of the issues proposed to be raised at the hearing. All comments shall be considered in making the final decision and shall be answered as provided in paragraph (j) of this section. The permitting authority will keep a record of the commenters and of the issues raised during the public participation process, and such records shall be available to the public.

(f) *Public hearings*. (1) The permitting authority shall hold a hearing whenever it finds, on the basis of requests, a significant degree of public interest in a draft permit.

(2) The permitting authority may also hold a public hearing at its discretion, whenever, for instance, such a hearing might clarify one or more issues involved in the permit decision.

(3) Public notice of the hearing shall be given as specified in paragraph (d) of this section.

(4) Whenever a public hearing is held, the permitting authority shall designate a Presiding Officer for the hearing who shall be responsible for its scheduling and orderly conduct.

(5) Any person may submit oral or written statements and data concerning the draft permit. Reasonable limits may be set upon the time allowed for

oral statements, and the submission of statements in writing may be required. The public comment period under paragraph (d) of this section shall be automatically extended to the close of any public hearing under this section. The hearing officer may also extend the comment period by so stating at the hearing.

(6) A tape recording or written transcript of the hearing shall be made available to the public.

(g) *Obligation to raise issues and provide information during the public comment period.* All persons, including applicants, who believe any condition of a draft permit is inappropriate or that the permitting authority's initial decision to deny an application, terminate a permit, or prepare a draft permit is inappropriate, must raise all reasonably ascertainable issues and submit all reasonably ascertainable arguments supporting their position by the close of the public comment period (including any public hearing). Any supporting materials that are submitted shall be included in full and may not be incorporated by reference, unless they are already part of the administrative record in the same proceeding, or consist of State or Federal statutes and regulations, EPA documents of general applicability, or other generally available reference materials. In the case of a program delegated pursuant to § 71.10, if requested by the Administrator, the permitting authority shall make supporting materials not already included in the administrative record available to EPA. The permitting authority may direct commenters to provide such materials directly to EPA. A comment period longer than 30 days may be necessary to give commenters a reasonable opportunity to comply with the requirements of this section. Additional time shall be granted to the extent that a commenter who requests additional time demonstrates the need for such time.

(h) *Reopening of the public comment period.* (1) The permitting authority may order the public comment period reopened if the procedures of paragraph (h) of this section could expedite the decision making process. When the public comment period is reopened under paragraph (h) of this section, all

persons, including applicants, who believe any condition of a draft permit is inappropriate or that the permitting authority's initial decision to deny an application, terminate a permit, or prepare a draft permit is inappropriate, must submit all reasonably available factual grounds supporting their position, including all supporting material, by a date not less than 30 days after public notice under paragraph (h)(2) of this section, set by the permitting authority. Thereafter, any person may file a written response to the material filed by any other person, by a date, not less than 20 days after the date set for filing of the material, set by the permitting authority.

(2) Public notice of any comment period under this paragraph (h) shall identify the issues to which the requirements of paragraphs (h)(1) through (4) of this section shall apply.

(3) On its own motion or on the request of any person, the permitting authority may direct that the requirements of paragraph (h)(1) of this section shall apply during the initial comment period where it reasonably appears that issuance of the permit will be contested and that applying the requirements of paragraph (h)(1) of this section will substantially expedite the decision making process. The notice of the draft permit shall state whenever this has been done.

(4) A comment period of longer than 30 days may be necessary in complicated proceedings to give commenters a reasonable opportunity to comply with the requirements of this section. Commenters may request longer comment periods and they may be granted to the extent the permitting authority finds it necessary.

(5) If any data, information, or arguments submitted during the public comment period appear to raise substantial new questions concerning a permit, the permitting authority may take one or more of the following actions:

(i) Prepare a new draft permit, appropriately modified;

(ii) Prepare a revised statement of basis, and reopen the comment period; or

(iii) Reopen or extend the comment period to give interested persons an opportunity to comment on the information or arguments submitted.

(6) Comments filed during the reopened comment period shall be limited to the substantial new questions that caused the reopening. The public notice shall define the scope of the reopening.

(7) Public notice of any of the above actions shall be issued under paragraph (d) of this section.

(i) *Issuance and effective date of permit.*

(1) After the close of the public comment period on a draft permit, the permitting authority shall issue a final permit decision. The permitting authority shall notify the applicant and each person who has submitted written comments or requested notice of the final permit decision. This notice shall include reference to the procedures for appealing a decision on a permit. For the purposes of this section, a final permit decision means a final decision to issue, deny, revise, revoke and reissue, renew, or terminate a permit.

(2) A final permit decision shall become effective 30 days after the service of notice of the decision, unless:

(i) A later effective date is specified in the decision;

(ii) Review is requested under paragraph (l) of this section (in which case the specific terms and conditions of the permit which are the subject of the request for review shall be stayed); or

(iii) No comments requested a change in the draft permit, in which case the permit shall become effective immediately upon issuance.

(j) *Response to comments.* (1) At the time that any final permit decision is issued, the permitting authority shall issue a response to comments. This response shall:

(i) Specify which provisions, if any, of the draft permit have been changed in the final permit decision, and the reasons for the change; and

(ii) Briefly describe and respond to all significant comments on the draft permit raised during the public comment period, or during any hearing.

(2) Any documents cited in the response to comments shall be included in the administrative record for the final permit decision as defined in

paragraph (k) of this section. If new points are raised or new material supplied during the public comment period, the permitting authority may document its response to those matters by adding new materials to the administrative record.

(3) The response to comments shall be available to the public.

(4) The permitting authority will notify in writing any affected State of any refusal to accept recommendations for the permit that the State submitted during the public or affected State review period.

(k) *Administrative record for final permits.* (1) The permitting authority shall base final permit decisions on the administrative record defined in paragraph (k)(2) of this section.

(2) The administrative record for any final permit shall consist of:

(i) All comments received during any public comment period, including any extension or reopening;

(ii) The tape or transcript of any hearing(s) held;

(iii) Any written material submitted at such a hearing;

(iv) The response to comments and any new materials placed in the record;

(v) Other documents contained in the supporting file for the permit;

(vi) The final permit;

(vii) The application and any supporting data furnished by the applicant;

(viii) The draft permit or notice of intent to deny the application or to terminate the permit;

(ix) The statement of basis for the draft permit;

(x) All documents cited in the statement of basis;

(xi) Other documents contained in the supporting file for the draft permit.

(3) The additional documents required under paragraph (k)(2) of this section should be added to the record as soon as possible after their receipt or publication by the permitting authority. The record shall be complete on the date the final permit is issued.

(4) Material readily available at the permitting authority, or published materials which are generally available and which are included in the administrative record under the standards of paragraph (j) of this section need not

be physically included in the same file as the rest of the record as long as it is specifically referred to in the statement of basis or in the response to comments.

(1) *Appeal of permits.* (1) Within 30 days after a final permit decision has been issued, any person who filed comments on the draft permit or participated in the public hearing may petition the Environmental Appeals Board to review any condition of the permit decision. Any person who failed to file comments or failed to participate in the public hearing on the draft permit may petition for administrative review only to the extent of the changes from the draft to the final permit decision or other new grounds that were not reasonably foreseeable during the public comment period on the draft permit. The 30-day period within which a person may request review under this section begins with the service of notice of the permitting authority's action unless a later date is specified in that notice, except that the 30-day period within which a person may request review of a minor permit modification or administrative amendment begins upon the effective date of such action to revise the permit. The petition shall include a statement of the reasons supporting that review, including a demonstration that any issues raised were raised during the public comment period (including any public hearing) to the extent required by these regulations unless the petitioner demonstrates that it was impracticable to raise such objections within such period or unless the grounds for such objection arose after such period, and, when appropriate, a showing that the condition in question is based on:

- (i) A finding of fact or conclusion of law which is clearly erroneous; or
- (ii) An exercise of discretion or an important policy consideration which the Environmental Appeals Board should, in its discretion, review.

(2) The Board may also decide on its initiative to review any condition of any permit issued under this part. The Board must act under paragraph (1) of this section within 30 days of the service date of notice of the permitting authority's action.

(3) Within a reasonable time following the filing of the petition for review, the Board shall issue an order either granting or denying the petition for review. To the extent review is denied, the conditions of the final permit decision become final agency action. Public notice of any grant of review by the Board under paragraph (1)(1) or (2) of this section shall be given as provided in paragraph (d) of this section. Public notice shall set forth a briefing schedule for the appeal and shall state that any interested person may file an amicus brief. Notice of denial of review shall be sent only to the permit applicant and to the person(s) requesting review.

(4) A petition to the Board under paragraph (1)(1) of this section is, under 42 U.S.C. 307(b), a prerequisite to seeking judicial review of the final agency action.

(5) For purposes of judicial review, final agency action occurs when a final permit is issued or denied by the permitting authority and agency review procedures are exhausted. A final permit decision shall be issued by the permitting authority:

- (i) When the Board issues notice to the parties that review has been denied;
- (ii) When the Board issues a decision on the merits of the appeal and the decision does not include a remand of the proceedings; or
- (iii) Upon the completion of remand proceedings if the proceedings are remanded, unless the Board's remand order specifically provides that appeal of the remand decision will be required to exhaust administrative remedies.

(6) Motions to reconsider a final order shall be filed within ten (10) days after service of the final order. Every such motion must set forth the matters claimed to have been erroneously decided and the nature of the alleged errors. Motions for reconsideration under this provision shall be directed to, and decided by, the Board. Motions for reconsideration directed to the Administrator, rather than to the Board, will not be considered, except in cases that the Board has referred to the Administrator and in which the Administrator has issued the final order. A motion for reconsideration shall not stay

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the effective date of the final order unless specifically so ordered by the Board.

(m) *Computation of time.* (1) Any time period scheduled to begin on the occurrence of an act or event shall begin on the day after the act or event.

(2) Any time period scheduled to begin before the occurrence of an act or event shall be computed so that the period ends on the day before the act or event, except as otherwise provided.

(3) If the final day of any time period falls on a weekend or legal holiday, the time period shall be extended to the next working day.

(4) Whenever a party or interested person has the right or is required to act within a prescribed period after the service of notice or other paper upon him or her by mail, 3 days shall be added to the prescribed time.

(n) *Public petitions to the Permitting Authority.* (1) Any interested person (including the permittee) may petition the permitting authority to reopen a permit for cause, and the permitting authority may commence a permit reopening on its own initiative. However, the permitting authority shall not revise, revoke and reissue, or terminate a permit except for the reasons specified in § 71.7(f)(1) or § 71.6(a)(6)(i). All requests shall be in writing and shall contain facts or reasons supporting the request.

(2) If the permitting authority decides the request is not justified, it shall send the requester a brief written response giving a reason for the decision. Denials of requests for revision, revocation and reissuance, or termination are not subject to public notice, comment, or hearings. Denials by the permitting authority may be informally appealed to the Environmental Appeals Board by a letter briefly setting forth the relevant facts. The Board may direct the permitting authority to begin revision, revocation and reissuance, or termination proceedings under paragraph (n)(3) of this section. The appeal shall be considered denied if the Board takes no action within 60 days after receiving it. This informal appeal is, under 42 U.S.C. 307, a prerequisite to seeking judicial review of EPA action in denying a re-

quest for revision, revocation and reissuance, or termination.

(3) If the permitting authority decides the request is justified and that cause exists to revise, revoke and reissue or terminate a permit, it shall initiate proceedings to reopen the permit pursuant to § 71.7(f) or § 71.7(g).

### § 71.12 Prohibited acts.

Violations of any applicable requirement; any permit term or condition; any fee or filing requirement; any duty to allow or carry out inspection, entry, or monitoring activities; or any regulation or order issued by the permitting authority pursuant to this part are violations of the Act and are subject to full Federal enforcement authorities available under the Act.

## Subpart B—Permits for Early Reductions Sources

### § 71.21 Program overview.

(a) The regulations in this subpart provide for a limited, Federal, title V, permit program to establish alternative emission limitations for early reductions sources that have demonstrated qualifying reductions of hazardous air pollutants under section 112(i)(5) of the Act. A permit issued under this subpart which establishes such an enforceable alternative emission limitation shall grant all emissions units in the early reductions source a six-year extension from otherwise applicable dates of compliance for standards promulgated under section 112(d) of the Act.

(b) After approval of a State's comprehensive permit program pursuant to title V of the Act, the Administrator may continue to issue specialty permits under this subpart only under the following circumstances:

(1) The early reductions source filed a permit application under this subpart before the State obtained approval of a comprehensive title V permit program but the permit had not been finally issued at the time of State program approval; or

(2) The early reductions source will be required to file an early reductions

permit application under § 71.24(b) before a comprehensive permit application is required by the State under the approved program.

(c) When a circumstance described in paragraph (b)(1) or (b)(2) of this section occurs, the primary consideration in the Administrator's decision to issue a specialty permit is the degree of delay anticipated by deferring to the State for permit issuance.

(d) A Permit issued to an early reductions source under this subpart shall have a term not to exceed five years. Such a specialty permit shall be incorporated into a comprehensive title V permit subsequently issued to the facility containing the early reductions source, without reopening or revision of the specialty permit except as provided in § 71.26(e).

(e) Issuance of a specialty permit under this subpart does not relieve a source from an obligation to file a timely and complete comprehensive permit application as required under an approved comprehensive title V permit program.

(f) *Delegation to other permitting authorities.* (1) The Administrator may delegate to another permitting authority the responsibility to implement this permit program. Under such a delegation, the Administrator reserves the right to issue a final permit to early reductions sources that filed permit applications with the Administrator prior to the permitting authority obtaining delegation.

(2) Under any delegation, the Administrator will require that the permitting authority have enforcement authority substantially equivalent to that specified in § 70.11 of this chapter.

(3) Upon any delegation, administrative appeals of permit decisions issuing pursuant to the delegated program shall continue to be subject to the requirements of § 71.27(l).

#### § 71.22 Definitions.

All terms used in this subpart not defined in this section are given the same meaning as in the Act or in subpart D of part 63 of this chapter.

*Act* means the Clean Air Act, as amended, 42 U.S.C. 7401, *et seq.*

*Actual emissions* means the actual rate of emissions of a pollutant, but

does not include excess emissions from a malfunction, or startups and shutdowns associated with a malfunction. Actual emissions shall be calculated using the early reductions source's actual operating rates, and types of materials processed, stored, or combusted during the selected time period.

*Affected States* are all States:

(1) Whose air quality may be affected and that are contiguous to the State in which a permit, permit modification or permit renewal is being proposed; or

(2) That are within 50 miles of the permitted source.

*Comprehensive title V permit program* means a program approved by the Administrator under part 70 of this chapter or a program promulgated for EPA permit issuance under title V that encompasses all applicable requirements of the Clean Air Act.

*Draft permit* means the version of a permit for which the Administrator offers public participation under § 71.27.

*Early reductions source* means a source of hazardous air pollutants as defined pursuant to § 63.73 of this chapter.

*Emissions unit* means any part or activity of a stationary source that emits or has the potential to emit any hazardous air pollutant.

*Enforceable commitment* means a document drafted pursuant to section 112(i)(5)(B) of the Act and signed by a responsible company official which commits a company to achieving before January 1, 1994 sufficient reductions in hazardous air pollutants from a designated early reductions source to qualify such source for a compliance extension under section 112(i)(5)(A) of the Act.

*EPA or Administrator* means the Administrator of the EPA or his or her designee.

*Final permit* means the version of a permit issued by the Administrator under this subpart that has completed all review procedures required by § 71.27.

*Hazardous air pollutant* means any air pollutant listed pursuant to section 112(b) of the Act.

*Permit* means any permit covering an existing early reductions source that is issued, amended, or revised pursuant to this subpart.

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*Permit revision* means any permit modification or administrative permit amendment.

*Permitting authority* means either of the following:

(1) The Administrator, in the case of EPA-implemented programs; or

(2) The State air pollution control agency, local agency, other State agency, or other agency authorized by the Administrator to carry out a permit program under this subpart.

*Post-reduction year* means the one year period beginning with the date early reductions have to be achieved to qualify for a compliance extension under subpart D of part 63 of this chapter, unless a source has established with the Administrator an earlier one year period as the post-reduction year. For most sources, the post-reduction year would begin with the date of proposal of the first section 112(d) standard applicable to the early reductions source; however, for sources that have made enforceable commitments, it would be the year from January 1, 1994 through December 31, 1994.

*Responsible official* means one of the following:

(1) For a corporation: a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation, or a duly authorized representative of such person if the representative is responsible for the overall operation of one or more manufacturing, production, or operating facilities applying for or subject to a permit and either:

(i) The facilities employ more than 250 persons or have gross annual sales or expenditures exceeding \$25 million (in second quarter 1980 dollars); or

(ii) The delegation of authority to such representative is approved in advance by the permitting authority;

(2) For a partnership or sole proprietorship: a general partner or the proprietor, respectively; or

(3) For a municipality, State, Federal, or other public agency: Either a principal executive officer or ranking elected official. For the purposes of this part, a principal executive officer of a Federal agency includes the chief

executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., a Regional Administrator of EPA).

*Section 112(d) standard* means an emission standard issued by the Administrator under section 112(d) of the Clean Air Act, as amended.

*State* means any non-Federal permitting authority, including any local agency, interstate association, or statewide program. The term "State" also includes the District of Columbia, the Commonwealth of Puerto Rico, the Virgin Islands, Guam, American Samoa, and the Commonwealth of the Northern Mariana Islands. Where such meaning is clear from the context, "State" shall have its conventional meaning.

### § 71.23 Applicability.

(a) *Sources covered.* The provisions of this subpart apply to an owner or operator of an existing source who is seeking a compliance extension under section 112(i)(5) of the Act and who, pursuant to part 63, subpart D, of this chapter, is required to file a permit application for the extension prior to the date a comprehensive title V permit program is approved for the State in which the existing source is located.

(b) *Covered emissions.* All hazardous air pollutant emissions from the early reductions source shall be included in permit applications and part 71 permits issued under this subpart.

### § 71.24 Permit applications.

(a) *Where to file.* To apply for a compliance extension and an alternative emission limitation under this subpart, the owner or operator of an early reductions source shall file a complete permit application with the appropriate EPA Regional Office. The owner or operator shall also send a copy of the application to the appropriate State agency; to the EPA Emission Standards Division, Mail Drop 13, Research Triangle Park, North Carolina, 27711 (attention: Early Reductions Officer); and to the EPA Office of Enforcement, EN-341W, 401 M Street, SW., Washington, DC 20460 (attention: Early Reductions Officer).

(b) *Deadlines.* (1) Permit applications under this subpart for early reductions

sources not subject to enforceable commitments shall be submitted by the later of the following dates:

(i) 120 days after proposal of an otherwise applicable standard issued under section 112(d) of the Act; or

(ii) March 21, 1995.

(2) Permit applications for early reductions sources subject to enforceable commitments established pursuant to § 63.75 of this chapter shall be filed no later than April 30, 1994.

(3) If the post-reduction year does not end at least one month before the permit application deadline under paragraphs (b)(1) or (b)(2) of this section, the source may file the post-reduction emissions information required under paragraph (e)(2) of this section later as a supplement to the original permit application. In such cases, this supplemental information shall be submitted to the Administrator no later than one month after the end of the post-reduction year.

(4) If a source test will be the supporting basis for establishing post-reduction emissions for one or more emissions units in the early reductions source, the test results shall be submitted by the deadline for submittal of a permit application under this section.

(c) *Complete application.* To be found complete, an application must provide all information required pursuant to paragraph (e) of this section, except for the information on post-reduction emissions required under paragraph (e)(2) of this section. Applications for permit revision need supply the information required under paragraph (e) of this section only if it is related to the proposed change. Information submitted under paragraph (e) of this section must be sufficient to allow the Administrator to determine if the early reductions source meets the applicable requirements of subpart D of part 63 of this chapter. Unless the Administrator determines that an application is not complete within 45 days of receipt of the application, such application shall be deemed to be complete, except as otherwise provided in § 71.26(a)(3). If, while processing an application that has been determined or deemed to be complete, the Administrator determines that additional information is necessary to evaluate or take final ac-

tion on that application, the Administrator may request such information in writing and set a reasonable deadline for a response.

(d) *Duty to supplement or correct application.* Any applicant who fails to submit any relevant facts or who has submitted incorrect information in a permit application shall, upon becoming aware of such failure or incorrect submittal, promptly submit such supplementary facts or corrected information. In addition, an applicant shall provide additional or revised information as necessary to address any requirements of subpart D of part 63 of this chapter (Compliance Extensions for Early Reductions) or of this subpart that become applicable to the early reductions source after the date it filed a complete application but prior to release of a draft permit.

(e) *Required information.* The following elements are required information for permit applications under this subpart:

(1) Identifying information, including company name, telephone number, and address (or plant name, telephone number, and address if different from the company name); owner's name, telephone number, and agent; and telephone number(s) and name(s) of plant site manager/contact;

(2) All information required in § 63.74 of this chapter, including that needed to describe the early reductions source, its base year and post-reduction emissions, and supporting basis for the emissions;

(3) A statement of the proposed alternative emission limitation for hazardous air pollutants from the early reductions source on an annual basis, reflecting the emission reductions required to qualify the early reductions source for a compliance extension under subpart D of part 63 of this chapter;

(4) Additional emission limiting requirements, such as work practice standards or limitations on operation, which are necessary to assure proper operation of installed control equipment and compliance with the annual alternative emission limitation for the early reductions source;

(5) Information necessary to define alternative operating scenarios for the

early reductions source or permit terms and conditions for trading hazardous air pollutant increases and decreases under § 71.25(a)(10), including any associated permit terms and conditions needed to assure compliance with the alternative emission limitation under the alternative operating scenarios or pollutant trading; and

(6) Statements related to compliance meeting the following criteria:

(i) A statement of methods proposed to determine compliance by the early reductions source with the proposed alternative emission limitation, including a description of monitoring devices and activities, emission calculation procedures, recordkeeping, and reporting requirements and test methods; and

(ii) A schedule for submission of compliance certifications during the permit term, to be submitted no less frequently than annually.

(f) Any application form, report, or compliance certification submitted pursuant to these regulations shall contain certification by a responsible official of truth, accuracy, and completeness. This certification and any other certification required under this part shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.

**§ 71.25 Permit content.**

(a) *Standard permit requirements.* Each permit issued under this subpart shall include the following elements:

(1) *Alternative emission limitation.* An annual alternative emission limitation for hazardous air pollutants from the early reductions source reflecting the 90 percent reduction (95 percent for hazardous air pollutants which are particulate matter) which qualified the early reductions source for a compliance extension under subpart D of part 63 of this chapter.

(2) *Additional limitations.* Additional emission limiting requirements, such as limitations on operation, work practice standards, and any other emission limiting requirements for the early reductions source necessary to assure compliance with the alternative emission limitation.

(3) *Monitoring requirements.* Each permit shall contain the following monitoring requirements:

(i) All emissions monitoring and analysis procedures or test methods necessary to assure compliance with the emission limitations established under paragraphs (a)(1) and (a)(2) of this section. Such monitoring or testing shall be consistent with the demonstration made pursuant to § 63.74 of this chapter and any procedures and methods promulgated pursuant to sections 114(a)(3) or 504(b) of the Act;

(ii) Periodic monitoring or testing sufficient to yield reliable data from the relevant time period that are representative of the early reductions source's compliance with the permit. Such monitoring requirements shall assure use of terms, test methods, units, averaging periods, and other statistical conventions consistent with the demonstration made pursuant to § 63.74 of this chapter. Recordkeeping provisions may be sufficient to meet the requirements of this paragraph (a)(3)(ii); and

(iii) As necessary, requirements concerning the use, maintenance, and, where appropriate, installation of monitoring equipment or methods.

(4) *Recordkeeping requirements.* The permit shall contain recordkeeping requirements including the following, as applicable:

(i) Records of required monitoring information that include the following:

(A) The date, place as defined in the permit, and time of sampling or measurements;

(B) The date(s) analyses were performed;

(C) The company or entity that performed the analyses;

(D) The analytical techniques or methods used;

(E) The results of such analyses; and

(F) The operating conditions as existing at the time of sampling or measurement;

(ii) Retention of records of all required monitoring data and support information for a period of at least 5 years from the date of the monitoring sample, measurement, report, or application. Support information includes all calibration and maintenance

records and all original strip-chart recordings for continuous monitoring instrumentation, and copies of all reports required by the permit.

(5) *Reporting requirements.* The permit shall require the following:

(i) Submittal of reports of all required monitoring at least every 6 months. All instances of deviations from permit requirements must be clearly identified in such reports; and

(ii) Prompt reporting of any deviations from permit requirements, including those attributable to upset conditions as defined in the permit. Such reports shall include the probable cause of such deviations and any corrective actions or preventive measures taken. The Administrator will define "prompt" in the permit for each situation and will do so in relation to the degree and type of deviation likely to occur.

(6) A severability clause to ensure the continued validity of the various permit requirements in the event of a challenge to any portions of the permit.

(7) Provisions stating the following:

(i) The permittee must comply with all conditions of part 71 permit issued under this subpart. A violation of an alternative emission limitation, as well as any other requirement established in a permit issued under this subpart, is enforceable pursuant to the authority of section 113 of the Act, notwithstanding any demonstration of continuing 90 percent (95 percent in the case of hazardous air pollutants which are particulates) emission reduction over the entire early reductions source. Any permit noncompliance constitutes a violation of the Act and is grounds for enforcement action or for permit termination, revocation and reissuance, or modification;

(ii) Need to halt or reduce activity not a defense. It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit;

(iii) The permit may be revised, revoked, reopened, and reissued, or terminated for cause. The filing of a request by the permittee for a permit revision, revocation and reissuance, or

termination, or of a notification of planned changes or anticipated non-compliance does not stay any permit condition;

(iv) The permit does not convey any property rights of any sort, or any exclusive privilege; and

(v) The permittee shall furnish to the Administrator, within a reasonable time, any information that the Administrator may request in writing to determine whether cause exists for revising the permit, revoking and reissuing, or terminating the permit or to determine compliance with the permit. Upon request, the permittee shall also furnish to the Administrator copies of records required to be kept by the permittee.

(8) Terms and conditions for reasonably anticipated operating scenarios identified by the early reductions source in its application as approved by the Administrator. Such terms and conditions:

(i) Shall require the early reductions source, contemporaneously with making a change from one operating scenario to another, to record in a log at the permitted facility a record of the scenario under which it is operating. Provided that an emitting unit is monitored in a way that provides contemporaneous identification that a change to a particular alternate scenario has occurred, no notice to the Administrator is required. Otherwise, when such a change is made, the permittee at the beginning of the following week shall place in regular mail to the Administrator notice that a change to a particular alternate operating scenario has occurred; and

(ii) Must ensure that the terms and conditions of each such alternative scenario meet the alternative emission limitation and the requirements of this subpart.

(9) Terms and conditions, if the permit applicant requests them, for the trading of hazardous air pollutant emissions increases and decreases among emissions units within the early reductions source without permit revision or case-by-case approval of each emissions trade, provided that:

(i) Such terms and conditions include all terms required under paragraphs (a)

and (c) of this section to determine compliance;

(ii) The changes in hazardous air pollutant emissions do not exceed the emissions allowable under the permit;

(iii) The changes in hazardous air pollutant emissions are not modifications under any provision of title I of the Act;

(iv) The Administrator determines that the emissions are quantifiable and that replicable procedures or other practical means exist to enforce the emission trades; and

(v) The early reductions source owner or operator provides the Administrator written notification at least 7 days in advance of the proposed changes and includes in the notification a description of the change in emissions that will occur, when the change will occur, and how the increases and decreases in emissions will comply with the alternative emission limitation and other terms and conditions of the permit.

(b) *Federally enforceable requirements.* All terms and conditions in a permit issued under this subpart are enforceable by the Administrator and citizens under the Act.

(c) *Compliance requirements.* All permits issued under this subpart shall contain the following elements with respect to compliance:

(1) Consistent with paragraphs (a)(3), (a)(4), and (a)(5) of this section, testing, monitoring, recordkeeping, and reporting requirements sufficient to assure compliance with the terms and conditions of the permit. Any document (including reports) required to be submitted by a permit shall contain a certification by a responsible official that meets the requirements of § 71.24(f).

(2) Inspection and entry provisions that require that, upon presentation of credentials and other documents as may be required by law, the permittee shall allow the Administrator or an authorized representative to perform the following:

(i) Enter upon the permittee's premises where the early reductions source is located or emissions-related activity is conducted, or where required records are kept;

(ii) Have access to and copy, at reasonable times, any records that must

be kept under the conditions of the permit;

(iii) Inspect at reasonable times any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under the permit; and

(iv) Sample or monitor at reasonable times substances or parameters for the purpose of determining compliance with the permit.

(3) Requirements for compliance certification with terms and conditions contained in the permit, including the alternative emission limitation. Permits shall include each of the following:

(i) The frequency (not less than annually) of submissions of compliance certifications;

(ii) Consistent with paragraph (a)(3) of this section, a means for monitoring the compliance of the early reductions source with its alternative emission limitation;

(iii) A requirement that the compliance certification include the following:

(A) The identification of each term or condition of the permit that is the basis of the certification;

(B) The compliance status;

(C) Whether compliance was continuous or intermittent;

(D) The method(s) used for determining the compliance status of the early reductions source, currently and over the reporting period consistent with paragraph (a)(3) of this section; and

(E) Such other facts as the Administrator may require to determine the compliance status of the early reductions source;

(iv) A requirement that all compliance certifications be submitted to the Administrator or the Administrator's designated agent; and

(v) Such additional requirements as may be specified pursuant to sections 114(a)(3) and 504(b) of the Act.

(4) Such other provisions as the Administrator may require.

(d) *Permit shield.* (1) The Administrator will expressly include in a permit issued pursuant to this subpart a provision stating that compliance with the conditions of the permit shall be

deemed compliance with part 63, subpart D, of this chapter (the Early Reductions Rule), as of the date of permit issuance.

(2) A permit shield may be extended to all permit terms and conditions for alternate operating scenarios pursuant to paragraph (a)(9) of this section or that allow increases and decreases in hazardous air pollutant emissions pursuant to paragraph (a)(10) of this section.

(3) Nothing in this paragraph (d) or in any permit issued pursuant to this subpart shall alter or affect the following:

(i) The provisions of sections 112(r) and 303 of the Act (emergency orders);

(ii) The liability of an owner or operator of an early reductions source for any violation of applicable requirements prior to or at the time of permit issuance; or

(iii) The ability of the Administrator to obtain information from an early reductions source pursuant to section 114 of the Act.

(e) *Emergency provision—(1) Definition.* An “emergency” means any situation arising from sudden and reasonably unforeseeable events beyond the control of the early reductions source, including acts of God, which situation requires immediate corrective action to restore normal operation, and that causes the early reductions source to exceed an emission limitation under the permit, due to unavoidable increases in emissions attributable to the emergency. An emergency shall not include noncompliance to the extent caused by improperly designed equipment, lack of preventative maintenance, careless or improper operation, or operator error.

(2) *Effect of an emergency.* An emergency constitutes an affirmative defense to an action brought for noncompliance with such an emission limitation if the conditions of paragraph (e)(3) of this section are met.

(3) The affirmative defense of emergency shall be demonstrated through properly signed, contemporaneous operating logs, or other relevant evidence that:

(i) An emergency occurred and that the permittee can identify the cause(s) of the emergency;

(ii) The permitted facility was at the time being properly operated;

(iii) During the period of the emergency the permittee took all reasonable steps to minimize levels of emissions that exceeded the emission limitation, or other requirements in the permit; and

(iv) The permittee submitted notice of the emergency to the Administrator within 2 working days of the time when emission limitations were exceeded due to the emergency. This notice fulfills the requirement of paragraph (a)(5)(ii) of this section. This notice must contain a description of the emergency, any steps taken to mitigate emissions, and corrective actions taken.

(4) In any enforcement proceeding, the permittee seeking to establish the occurrence of an emergency has the burden of proof.

**§ 71.26 Permit issuance, reopenings, and revisions.**

(a) *Action on application.* (1) A permit or permit revision may be issued only if all of the following conditions have been met:

(i) The Administrator has received a complete application for a permit or permit revision;

(ii) The requirements for public participation under § 71.27 have been followed; and

(iii) The conditions of the proposed permit or permit revision meet all the requirements of § 71.25 and provide for compliance with an alternative emission limitation reflecting the emissions reduction which qualified the early reductions source for a compliance extension under part 63, subpart D, of this chapter.

(2) The Administrator will take final action on each permit application (including a request for permit revision) within 12 months after receiving a complete application, except that final action may be delayed where an applicant fails to provide additional information in a timely manner as requested by the Administrator under § 71.24(c).

(3) The Administrator will promptly provide notice to the applicant of whether the application is complete.

Unless the Administrator requests additional information or otherwise notifies the applicant of incompleteness within 45 days of receipt of an application, the application shall be deemed complete. For revisions that qualify as administrative amendments and are processed through the procedures of paragraph (c) of this section, a completeness determination need not be made.

(4) If a source submits a timely and complete application for permit issuance, the source's failure to have a title V permit for purposes of any requirements under section 112 pertaining to the early reductions source is not a violation of this part until the Administrator takes final action on the permit application. This protection shall cease to apply if, subsequent to the completeness determination made pursuant to paragraph (a)(3) of this section, and as required by § 71.24(d), the applicant fails to submit by the deadline specified in writing by the Administrator any additional information identified as being needed to process the application.

(b) *Permit renewal and expiration.* (1) Permits issued under this subpart shall not be renewed. Permit renewal for expiring permits issued under this subpart shall be accomplished according to the requirements of title V of the Act for comprehensive permits for the facility containing the early reductions source.

(2) Except as specified in paragraph (b)(3) of this section, permit expiration terminates the early reductions source's right to operate.

(3) If, consistent with the requirements of title V of the Act, a timely and complete application for a comprehensive title V permit for the facility containing the early reductions source has been submitted but the permitting authority has failed to issue or deny the comprehensive permit prior to expiration of a permit issued under this subpart, then the existing permit for the early reductions source shall not expire until the comprehensive title V permit for the facility has been issued or denied.

(c) *Administrative permit amendments.*

(1) An "administrative permit amendment" is a permit revision that:

- (i) Corrects typographical errors;
- (ii) Identifies a change in the name, address, or phone number of any person identified in the permit, or provides a similar minor administrative change at the source;
- (iii) Requires more frequent monitoring or reporting by the permittee;
- (iv) Allows for a change in ownership or operational control of an early reductions source where the permitting authority determines that no other change in the permit is necessary, provided that a written agreement containing a specific date for transfer of permit responsibility, coverage, and liability between the current and new permittee has been submitted to the permitting authority; or
- (v) Incorporates any other type of change which the Administrator has determined to be ministerial in nature and, therefore, similar to those in paragraphs (c)(1)(i) through (c)(1)(iv) of this section.

(2) *Administrative permit amendment procedures.* Administrative permit amendments may be made to a permit issued under this subpart using the following procedures:

(i) The source shall submit to the Administrator an application containing a proposed addendum to the source's permit. The application shall demonstrate how the proposed change meets one of the criteria for administrative amendments set forth in paragraphs (c)(1)(i) through (c)(1)(iv) of this section, and include certification by the responsible official consistent with § 71.24(f) that the change is eligible for administrative amendment procedures. The addendum shall:

(A) Identify the terms of the part 71, subpart B permit the source proposes to change;

(B) Propose new permit terms consistent with the provisions of this subpart applicable to the change;

(C) Designate the addendum as having been processed under the procedures of this paragraph (c); and

(D) Specify that the addendum will be effective 60 days from the date of the Administrator's receipt, unless the Administrator disapproves the change within such period.

(ii) The Administrator will allow the source to implement the requested

change immediately upon making all required submittals, including the proposed addendum.

(iii) The proposed addendum will become effective 60 days after the Administrator receives the submittal, provided the Administrator has not disapproved the request in writing before the end of the 60-day period. The Administrator shall record the change by attaching a copy of the addendum to the part 71, subpart B permit.

(iv) If the Administrator disapproves the change, he or she shall notify the source of the reasons for the disapproval in a timely manner. Upon receiving such notice, the source shall comply with the terms of the permit that it had proposed to change, and thereafter the proposed addendum shall not take effect.

(v) The process in this paragraph (c) may also be used for changes initiated by the Administrator that meet the criteria under paragraphs (c)(1) (i), (ii), and (iv) of this section. For such changes, the Administrator will notify the source of the proposed change and its effective date, and shall attach a copy of the change to the existing permit. On the effective date of the proposed change, the source shall comply with the provisions of the proposed change.

(vi) The permit shield under § 71.25(d) may not extend to administrative amendments processed under this paragraph (c)(2).

(d) *Permit revision procedures*—(1) *Criteria*. Permit revision procedures shall be used for applications requesting permit revisions that do not qualify as administrative amendments. Nothing in this paragraph (d) shall be construed to preclude the permittee from making changes consistent with this subpart that would render existing permit compliance terms and conditions irrelevant.

(2) Permit revisions shall meet all requirements of this subpart, including those for applications, public participation, and review by affected States, as they apply to permit issuance. The Administrator will complete review on permit revisions within 9 months after receipt of a complete application.

(e) *Reopening for cause*. (1) Each issued permit shall include provisions

specifying the conditions under which the permit will be reopened. A permit shall be reopened and revised under any of the following circumstances:

(i) The Administrator determines that the permit contains a material mistake or that inaccurate statements were made in establishing the emission limits or other terms or conditions of the permit.

(ii) The Administrator determines that the permit must be revised to assure compliance with the alternative emission limitation.

(2) Proceedings to reopen and issue a permit shall follow the same procedures as apply to initial permit issuance and shall affect only those parts of the permit for which cause to reopen exists.

(3) Reopenings under paragraph (e)(1) of this section shall not be initiated before a notice of such intent is provided to the early reductions source by the Administrator. Such notice will be provided at least 30 days in advance of the date that the permit is to be reopened, except that the Administrator may provide a shorter time period in the case of an emergency.

(f) *EPA review under State programs for issuing specialty permits*. (1) If the Administrator approves a State program for the implementation of this subpart, the State program shall require that the Administrator receive a copy of each permit application (including any application for permit revision) each proposed permit, and each final permit issued pursuant to this subpart. The State program may require that the applicant provide a copy of any permit application directly to the Administrator.

(2) The Administrator will object to the issuance of any proposed permit determined by the Administrator not to be in compliance with requirements under this subpart or part 63 of this chapter. If the Administrator objects in writing within 45 days of receipt of a proposed permit and all necessary supporting documentation, the State shall not issue the permit.

(3) Any EPA objection to a proposed permit will include a statement of the Administrator's reasons for objection and a description of the terms and conditions that the permit must include to

respond to the objections. The Administrator will provide the permit applicant a copy of the objection.

(4) Failure of the State to do any of the following also shall constitute grounds for an objection:

(i) Comply with paragraph (f)(1) of this section;

(ii) Submit any information necessary to review adequately the proposed permit; or

(iii) Process the permit under procedures approved to meet paragraph (f) of this section.

(5) If the State fails, within 90 days after the date of an objection under paragraph (f)(2) of this section, to revise and submit a proposed permit in response to the objection, the Administrator will issue or deny the permit in accordance with the requirements of this subpart.

(6) *Public petitions to the Administrator.* Within 60 days after expiration of the Administrator's 45-day review period, any person may petition the Administrator in writing to make an objection. Any such petition shall be based only on objections to the permit that were raised with reasonable specificity during the public comment period provided for and consistent with § 71.27, unless the petitioner demonstrates that it was impracticable to raise such objections within such period, or unless the grounds for such objection arose after such period. If the Administrator objects to the permit as a result of a petition filed under this paragraph, the permitting authority shall not issue the permit until EPA's objection has been resolved, except that a petition for review does not stay the effectiveness of a permit or its requirements if the permit was issued after the end of the 45-day review period and prior to an objection. If the permitting authority has issued a permit prior to receipt of an EPA objection under this paragraph, the Administrator will revise, terminate, or revoke such permit, and shall do so consistent with the procedures in 40 CFR 70.7(g)(4) or (g)(5)(i) except in unusual circumstances, and the permitting authority may thereafter issue only a revised permit that satisfies EPA's objection. In any case, the source will not be in violation of the requirement to have

submitted a timely and complete application.

**§ 71.27 Public participation and appeal.**

All permit proceedings, including preparation of draft permits, initial permit issuance, permit revisions, and granted appeals, shall provide adequate procedures for public participation, including notice, opportunity for comment, a hearing if requested, and administrative appeal. Specific procedures shall include the following:

(a) *Revision, revocation and reissuance, or termination of permits.* (1) Permits may be revised, revoked and reissued, or terminated either at the request of any interested person (including the permittee) or upon the Administrator's initiative. However, permits may only be revised, revoked and reissued, or terminated for the reasons specified in §§ 71.25(a)(7) and 71.26(e). All requests shall be in writing and shall contain facts or reasons supporting the request.

(2) If the Administrator decides the request is not justified, he or she shall send the requester a brief written response giving a reason for the decision. Denials of requests for revision, revocation and reissuance, or termination are not subject to public notice, comment, or hearings. Denials by the Administrator may be informally appealed to the Environmental Appeals Board by a letter briefly setting forth the relevant facts. The Board may direct the Administrator to begin revision, revocation and reissuance, or termination proceedings under paragraph (a)(3) of this section. The appeal shall be considered denied if the Board takes no action within 60 days after receiving it. This informal appeal is, under 42 U.S.C. 307, a prerequisite to seeking judicial review of EPA action in denying a request for revision, revocation and reissuance, or termination.

(3)(i) Except in the case of administrative amendment of a permit, if the Administrator tentatively decides to revise or revoke and reissue a permit under §§ 71.25(a)(7) and 71.26(e), he or she shall prepare a draft permit under paragraph (b) of this section incorporating the proposed changes. The Administrator may request additional information and, in the case of a revised

permit, shall require the submission of an updated application. In the case of revoked and reissued permits, the Administrator shall require the submission of a new application.

(ii) In a permit revision under this subsection, only those conditions to be revised shall be reopened when a new draft permit is prepared. All other aspects of the existing permit shall remain in effect for the duration of the unrevised permit. When a permit is revoked and reissued under this subsection, the entire permit is reopened just as if the permit had expired and was being reissued. During any revocation and reissuance proceeding the permittee shall comply with all conditions of the existing permit until a new final permit is reissued.

(4) If the Administrator tentatively decides to terminate a permit under §§ 71.25(a)(7) and 71.26(e), he or she shall issue a notice of intent to terminate. A notice of intent to terminate is a type of draft permit which follows the same procedures as any draft permit prepared under paragraph (b) of this section. A notice of intent to terminate shall not be issued if the Administrator and the permittee agree to termination in the course of transferring permit responsibility to an approved State under § 71.21(e).

(5) Any request by the permittee for revision to an existing permit shall be treated as a permit application and shall be processed in accordance with all requirements of § 71.24.

(b) *Draft permits.* (1) Once an application is complete, the Administrator shall tentatively decide whether to prepare a draft permit or to deny the application.

(2) If the Administrator tentatively decides to deny the permit application, he or she shall issue a notice of intent to deny. A notice of intent to deny the permit application is a type of draft permit which follows the same procedures as any draft permit prepared under this subsection. If the Administrator's final decision is that the tentative decision to deny the permit application was incorrect, he or she shall withdraw the notice of intent to deny and proceed to prepare a draft permit under paragraph (b)(4) of this section.

(3) If the Administrator decides to prepare a draft permit, he or she shall prepare a draft permit that contains the permit conditions under § 71.25.

(4) All draft permits prepared under this subsection shall be publicly noticed and made available for public comment. The Administrator shall give notice of opportunity for a public hearing, issue a final decision and respond to comments. For all early reductions permits, an appeal may be taken under paragraph (l) of this section.

(c) *Statement of basis.* The Administrator shall prepare a statement of basis for every draft permit. The statement of basis shall briefly describe the derivation of the conditions of the draft permit and the reasons for them or, in the case of notices of intent to deny or terminate, reasons supporting the tentative decision. The statement of basis shall be sent to the applicant and, on request, to any other person.

(d) *Public notice of permit actions and public comment period*—(1) *Scope.* (i) The Administrator shall give public notice that the following actions have occurred:

(A) A permit application has been tentatively denied under paragraph (b)(2) of this section;

(B) A draft permit has been prepared under paragraph (b)(3) of this section;

(C) A hearing has been scheduled under paragraph (f) of this section;

(D) An appeal has been granted under paragraph (l)(3) of this section.

(ii) No public notice is required in the case of administrative permit amendments, or when a request for permit revision, revocation and reissuance, or termination has been denied under paragraph (a)(2) of this section. Written notice of that denial shall be given to the requester and to the permittee.

(iii) Public notices may describe more than one permit or permit action.

(2) *Timing.* (i) Public notice of the preparation of a draft permit or permit revision (including a notice of intent to deny a permit or permit revision application) shall allow at least 30 days for public comment.

(ii) Public notice of a public hearing shall be given at least 30 days before the hearing. (Public notice of the hearing may be given at the same time as

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public notice of the draft permit or permit revision and the two notices may be combined.)

(iii) The Administrator shall provide such notice and opportunity for participation to Affected States on or before the time that the Administrator provides this notice to the public.

(3) *Methods.* Public notice of activities described in paragraph (d)(1)(i) of this section shall be given by the following methods:

(i) By mailing a copy of a notice to the following persons (any person otherwise entitled to receive notice under this paragraph (d) may waive his or her rights to receive notice for any permit):

(A) The applicant;

(B) Any other agency which the Administrator knows has issued or is required to issue any other permit under the Clean Air Act for the same facility or activity;

(C) Affected States and Indian Tribes;

(D) Affected State and local air pollution control agencies, the chief executives of the city and county where the early reductions source is located, any comprehensive regional land use planning agency and any State, Federal Land Manager, or Indian Governing Body whose lands may be affected by emissions from the regulated activity;

(E) Persons on a mailing list developed by:

(1) Including those who request in writing to be on the list;

(2) Soliciting persons for "area lists" from participants in past permit proceedings in that area; and

(3) Notifying the public of the opportunity to be put on the mailing list through periodic publication in the public press and in such publications as Regional and State funded newsletters, environmental bulletins, or State law journals. (The Administrator may update the mailing list from time to time by requesting written indication of continued interest from those listed. The Administrator may delete from the list the name of any person who fails to respond to such a request.);

(F) Any unit of local government with authority for regulating air pollution and having jurisdiction over the area where the early reductions source

is located and to each State agency having any authority for regulating air pollution under State law with respect to the operation of such source.

(ii) By publication of a notice in a daily or weekly newspaper of general circulation within the area affected by the early reductions source.

(iii) By any other method reasonably calculated to give actual notice of the action in question to the persons potentially affected by it, including press releases or any other forum or medium to elicit public participation.

(4) *Contents*—(i) *All public notices.* All public notices issued under this subpart shall contain the following minimum information:

(A) The name and address of the Administrator or the Administrator's designated agent processing the permit;

(B) The name and address of the permittee or permit applicant and, if different, of the facility regulated by the permit;

(C) The activity or activities involved in the permit action;

(D) The emissions change involved in any permit revision;

(E) The name, address and telephone number of a person from whom interested persons may obtain additional information, including copies of the draft permit, the application, all relevant supporting materials, and all other materials available to the Administrator that are relevant to the permit decision;

(F) A brief description of the comment procedures required by paragraphs (e) and (f) of this section and the time and place of any hearing that will be held, including a statement of procedures to request a hearing (unless a hearing has already been scheduled) and other procedures by which the public may participate in the final permit decision; and

(G) Any additional information considered necessary or proper.

(ii) *Public notices for hearings.* In addition to the general public notice described in paragraph (d)(4)(i) of this section, the public notice of a hearing under paragraph (f) of this section shall contain the following information:

(A) Reference to the date of previous public notices relating to the permit;

(B) Date, time, and place of the hearing; and

(C) A brief description of the nature and purpose of the hearing, including the applicable rules and procedures.

(5) In addition to the general public notice described in paragraph (d)(4)(i) of this section, all persons identified in paragraphs (d)(3)(i)(A), (B), and (C) of this section shall be mailed a copy of the fact sheet or statement of basis, the permit application (if any), and the draft permit (if any).

(e) *Public comments and requests for public hearings.* During the public comment period provided under paragraph (a) of this section, any interested person may submit written comments on the draft permit or permit revision and may request a public hearing, if no hearing has already been scheduled. A request for a public hearing shall be in writing and shall state the nature of the issues proposed to be raised at the hearing. All comments shall be considered in making the final decision and shall be answered as provided in paragraph (j) of this section. The Administrator will keep a record of the commenters and of the issues raised during the public participation process, and such records shall be available to the public.

(f) *Public hearings.* (1)(i) The Administrator shall hold a hearing whenever he or she finds, on the basis of requests, a significant degree of public interest in a draft permit or permit revision.

(ii) The Administrator may also hold a public hearing at his or her discretion, whenever, for instance, such a hearing might clarify one or more issues involved in the permit decision.

(iii) Public notice of the hearing shall be given as specified in paragraph (d) of this section.

(2) Whenever a public hearing is held, the Administrator shall designate a Presiding Officer for the hearing who shall be responsible for its scheduling and orderly conduct.

(3) Any person may submit oral or written statements and data concerning the draft permit or permit revision. Reasonable limits may be set upon the time allowed for oral statements, and the submission of statements in writing may be required. The public comment period under paragraph (d) of this

section shall be automatically extended to the close of any public hearing under this subsection. The hearing officer may also extend the comment period by so stating at the hearing.

(4) A tape recording or written transcript of the hearing shall be made available to the public.

(g) *Obligation to raise issues and provide information during the public comment period.* All persons, including applicants, who believe any condition of a draft permit is inappropriate or that the Administrator's tentative decision to deny an application, terminate a permit, or prepare a draft permit is inappropriate, must raise all reasonably ascertainable issues and submit all reasonably ascertainable arguments supporting their position by the close of the public comment period (including any public hearing). Any supporting materials which are submitted shall be included in full and may not be incorporated by reference, unless they are already part of the administrative record in the same proceeding, or consist of State or Federal statutes and regulations, EPA documents of general applicability, or other generally available reference materials. Commenters shall make supporting materials not already included in the administrative record available to EPA as directed by the Administrator. (A comment period longer than 30 days may be necessary to give commenters a reasonable opportunity to comply with the requirements of this paragraph (g). Additional time shall be granted to the extent that a commenter who requests additional time demonstrates the need for such time.)

(h) *Reopening of the public comment period.* (1)(i) The Administrator may order the public comment period reopened if the procedures of this paragraph (h) could expedite the decision-making process. When the public comment period is reopened under this paragraph (h), all persons, including applicants, who believe any condition of a draft permit is inappropriate or that the Administrator's tentative decision to deny an application, terminate a permit, or prepare a draft permit is inappropriate, must submit all reasonably available factual grounds supporting their position, including all

supporting material, by a date, not less than 60 days after public notice under paragraph (h)(1)(ii) of this section, set by the Administrator. Thereafter, any person may file a written response to the material filed by any other person, by a date, not less than 20 days after the date set for filing of the material, set by the Administrator.

(ii) Public notice of any comment period under this paragraph shall identify the issues to which the requirements of paragraph (h)(1)(i) of this section shall apply.

(iii) On his or her own motion or on the request of any person, the Administrator may direct that the requirements of paragraph (h)(1)(i) of this section shall apply during the initial comment period where it reasonably appears that issuance of the permit will be contested and that applying the requirements of paragraph (h)(1)(i) of this section will substantially expedite the decisionmaking process. The notice of the draft permit shall state whenever this has been done.

(iv) A comment period of longer than 60 days will often be necessary in complicated proceedings to give commenters a reasonable opportunity to comply with the requirements of this subsection. Commenters may request longer comment periods and they shall be granted to the extent they appear necessary.

(2) If any data, information, or arguments submitted during the public comment period appear to raise substantial new questions concerning a permit, the Administrator may take one or more of the following actions:

(i) Prepare a new draft permit, appropriately modified;

(ii) Prepare a revised statement of basis, a fact sheet or revised fact sheet, and reopen the comment period; or

(iii) Reopen or extend the comment period to give interested persons an opportunity to comment on the information or arguments submitted.

(3) Comments filed during the reopened comment period shall be limited to the substantial new questions that caused its reopening. The public notice shall define the scope of the reopening.

(4) Public notice of any of the above actions shall be issued under paragraph (d) of this section.

(i) *Issuance and effective date of permit.*

(1) After the close of the public comment period on a draft permit, the Administrator shall issue a final permit decision. The Administrator shall notify the applicant and each person who has submitted written comments or requested notice of the final permit decision. This notice shall include reference to the procedures for appealing a decision on a permit. For the purposes of this paragraph (i), a final permit decision means a final decision to issue, deny, revise, revoke and reissue, or terminate a permit.

(2) A final permit decision shall become effective 30 days after the service of notice of the decision unless:

(i) A later effective date is specified in the decision; or

(ii) No comments requested a change in the draft permit, in which case the permit shall become effective immediately upon issuance.

(j) *Response to comments.* (1) At the time that any final permit decision is issued, the Administrator shall issue a response to comments. This response shall:

(i) Specify which provisions, if any, of the draft permit have been changed in the final permit decision, and the reasons for the change; and

(ii) Briefly describe and respond to all significant comments on the draft permit raised during the public comment period, or during any hearing.

(2) Any documents cited in the response to comments shall be included in the administrative record for the final permit decision as defined in paragraph (k) of this section. If new points are raised or new material supplied during the public comment period, EPA may document its response to those matters by adding new materials to the administrative record.

(3) The response to comments shall be available to the public.

(4) The Administrator will notify in writing any Affected State of any refusal to accept recommendations for the permit that the State submitted during the public or Affected State review period.

(k) *Administrative record for final permit.* (1) The Administrator shall base final permit decisions on the administrative record defined in this paragraph (k).

(2) The administrative record for any final permit shall consist of:

(i) All comments received during the public comment period, including any extension or reopening;

(ii) The tape or transcript of any hearing(s) held;

(iii) Any written material submitted at such a hearing;

(iv) The response to comments required by paragraph (j) of this section and any new materials placed in the record under paragraph (j) of this section;

(v) Other documents contained in the supporting file for the permit;

(vi) The final permit;

(vii) The application and any supporting data furnished by the applicant;

(viii) The draft permit or notice of intent to deny the application or to terminate the permit;

(ix) The statement of basis for the draft permit;

(x) All documents cited in the statement of basis; and

(xi) Other documents contained in the supporting file for the draft permit.

(3) The additional documents required under paragraph (k)(2) of this section should be added to the record as soon as possible after their receipt or publication by EPA. The record shall be complete on the date the final permit is issued.

(4) This section applies to all final permits.

(5) Material readily available at the issuing Regional Office, or published materials which are generally available and which are included in the administrative record under the standards of paragraph (j) of this section ("response to comments"), need not be physically included in the same file as the rest of the record as long as it is specifically referred to in the statement of basis or fact sheet or in the response to comments.

(1) *Appeal of permits.* (1) Within 30 days after a final permit decision has been issued, any person who filed comments on the draft permit or partici-

pated in the public hearing may petition the Environmental Appeals Board to review any condition of the permit decision. Any person who failed to file comments or failed to participate in the public hearing on the draft permit may petition for administrative review only to the extent of the changes from the draft to the final permit decision. The 30-day period within which a person may request review under this subsection begins with the service of notice of the Administrator's action unless a later date is specified in that notice. The petition shall include a statement of the reasons supporting that review, including a demonstration that any issues raised were raised during the public comment period (including any public hearing) to the extent required by these regulations unless the petitioner demonstrates that it was impracticable to raise such objections within such period or unless the grounds for such objection arose after such period, and, when appropriate, a showing that the condition in question is based on:

(i) A finding of fact or conclusion of law which is clearly erroneous; or

(ii) An exercise of discretion or an important policy consideration which the Environmental Appeals Board should, in its discretion, review.

(2) The Board may also decide on its initiative to review any condition of any permit issued under this subpart. The Board must act under this paragraph within 30 days of the service date of notice of the Administrator's action.

(3) Within a reasonable time following the filing of the petition for review, the Board shall issue an order either granting or denying the petition for review. To the extent review is denied, the conditions of the final permit decision become final agency action. Public notice of any grant of review by the Board under paragraph (1) (1) or (2) of this section shall be given as provided in paragraph (d) of this section. Public notice shall set forth a briefing schedule for the appeal and shall state that any interested person may file an amicus brief. Notice of denial of review shall be sent only to applicant and to the person(s) requesting review.

(4) A petition to the Board under paragraph (1)(1) of this section is, under

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42 U.S.C. 307(b), a prerequisite to the seeking of judicial review of the final agency action.

(5) For purposes of judicial review, final agency action occurs when a final permit is issued or denied by EPA and agency review procedures are exhausted. A final permit decision shall be issued by the Administrator:

(i) When the Board issues notice to the parties that review has been denied;

(ii) When the Board issues a decision on the merits of the appeal and the decision does not include a remand of the proceedings; or

(iii) Upon the completion of remand proceedings if the proceedings are remanded, unless the Board's remand order specifically provides that appeal of the remand decision will be required to exhaust administrative remedies.

(6) Neither the filing of a petition for review of any condition of the permit

or permit decision nor the granting of an appeal by the Environmental Appeals Board shall stay the effect of any contested permit or permit condition.

(m) *Computation of time.* (1) Any time period scheduled to begin on the occurrence of an act or event shall begin on the day after the act or event.

(2) Any time period scheduled to begin before the occurrence of an act or event shall be computed so that the period ends on the day before the act or event, except as otherwise provided.

(3) If the final day of any time period falls on a weekend or legal holiday, the time period shall be extended to the next working day.

(4) Whenever a party or interested person has the right or is required to act within a prescribed period after the service of notice or other paper upon him or her by mail, 3 days shall be added to the prescribed time.



## FINDING AIDS

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A list of CFR titles, subtitles, chapters, subchapters and parts and an alphabetical list of agencies publishing in the CFR are included in the CFR Index and Finding Aids volume to the Code of Federal Regulations which is published separately and revised annually.

Material Approved for Incorporation by Reference  
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## Material Approved for Incorporation by Reference

(Revised as of July 1, 1996)

The Director of the Federal Register has approved under 5 U.S.C. 552(a) and 1 CFR Part 51 the incorporation by reference of the following publications. This list contains only those incorporations by reference effective as of the revision date of this volume. Incorporations by reference found within a regulation are effective upon the effective date of that regulation. For more information on incorporation by reference, see the preliminary pages of this volume.

### 40 CFR, CHAPTER I (PARTS 61 TO 71): SUBCHAPTER C—AIR PROGRAMS ENVIRONMENTAL PROTECTION AGENCY

40 CFR

American National Standards Institute  
1430 Broadway, New York, NY 10018

ANSI N13.1–1969 Guide to Sampling Airborne Radioactive Materials in Nuclear Facilities. 61.18(c);  
61.93(b)(2)(ii);  
61.107(b)(2)(ii);  
Method 114,  
paragraph 2.1 to  
Appendix B of  
Part 61

American Petroleum Institute  
2101 L Street, NW., Washington, DC 20037

API Publication 2517, Evaporative Loss from External Floating-Roof Tanks, 3rd Ed., February 1989. 63.14; 63.111

API Publication 2518, Evaporative Loss from Fixed-Roof Tanks, 2nd Ed., October 1991. 63.14; 63.150

American Public Health Association  
1015 Fifteenth St. NW., Washington, DC 20005

Standard Methods for the Examination of Water and Wastewater, American Public Health Association, American Waterworks Association, and Water Pollution Control Federation, 18th Edition, 1992—Method 3500-Cr D, Colorimetric Method. 63.404

American Society for Testing and Materials  
1916 Race Street, Philadelphia, Pennsylvania 19103

ASTM D737–75, Standard Test Method for Air Permeability of Textile Fabrics. 61.23(a)

ASTM D 835–85, Standard Specification for Refined Benzene–485 61.18(a); 61.270(a)

ASTM D836–80, Standard Specification for Industrial Grade Benzene 61.120(a)

ASTM D 836–84, Standard Specification for Industrial Grade Benzene 61.18(a); 61.270(a)

ASTM D 1193–77, Standard Specification for Reagent Water ..... Par. 4.1.1 and par.  
4.4.2 of Appendix  
A to Part 63

ASTM D 1331–89, Standard Test Methods for Surface and Interfacial Tension of Solutions of Surface Active Agents. Par. 3.1 and par.  
4.2 of Appendix  
A to Part 63

ASTM D 1946–77, Standard Method for Analysis of Reformed Gas by Gas Chromatography. 63.11; 63.14

## Title 40—Protection of Environment

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|--|--|
| ASTM D2267–68 (Reapproved 1978), Aromatic in Light Naphtas and Aviation Gasolines by Gas Chromatography.   | 61.18(a)(4);<br>61.67(h)(1);<br>61.115(d)(1)   |
| ASTM D 2359–85a, Standard Specification for Refined Benzene–535.   | 61.18(a); 61.270(a)  |
| ASTM D2382–76, Heat of Combustion of Hydrocarbon Fuels by Bomb Calorimeter (High-Precision Method).  | 61.103(e)(3);<br>61.115(e)(3);<br>61.122(d)(3);<br>63.11; 63.14                                |
| ASTM D2504–67 (Reapproved 1977) Noncondensable Gases in C3 and Lighter Hydrocarbon Products by Gas Chromatography.   | 61.103(b); 61.115(e);<br>61.122(d)   |
| ASTM D 2879–83, Standard Test Method for Vapor Pressure-Temperature Relationship and Initial Decomposition Temperature of Liquids by Isoteniscope.   | 63.14; 63.111  |
| ASTM D2986–71 (Reapproved 1978), Standard Method for Evaluation of Air, Assay Media by the Monodisperse DOP (Dioctyl Phthalate) Smoke Test.  | Appendix B to Part<br>61, Method 103,<br>par. 2.1.3; Method<br>104, par. 3.1.1;<br>61.18(a)(3) |
| ASTM D 3695–88, Standard Test Method for Volatile Alcohols in Water by Direct Aqueous-Injection Gas Chromatography.  | 63.14; 63.365(e)(1)  |
| ASTM D 4734–87 Standard Specification for Refined Benzene–545  | 61.18(a); 61.270(a)  |
| ASTM E 50–82 (Reapproved 1986), Standard Practice for Apparatus Reagents, and Safety Precautions for Chemical Analysis of Metals.  | 61.18(a)(11); Method<br>108C, par. 2.1.4,<br>Appendix B to<br>Part 61                          |
| ASTM E 180–93 Standard Practice for Determining the Precision of ASTM Methods for Analysis and Testing of Industrial Chemicals.  | 63.14(b); 63.786(b)  |
| Environmental Protection Agency<br>Copies available at: First International Bldg., 1201 Elm St., Dallas, TX 75270  |  |
| Approved State Plans for designated facilities and pollutants .....  | 62.02(d)   |
| Approved plan for Louisiana .....  |  |
| Copies available at: Environmental Monitoring and Support Laboratory, Cincinnati, OH 45268   |  |
| Method 601, Test Method for Purgeable Halocarbons, July 1982 .....   | 61.67(g)(2)  |
| U.S. Government Printing Office<br>Washington, DC 20402–9371; Telephone: 202–512–1800; Telefacsimile: 202–275–0019   |  |
| Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, November 1986, as amended by Revision I, December 1987, order no. 955–001–00000–1; Method 8020, Aromatic Volatile Organics; Method 8021, Volatile Organic Compounds in Water by Purge and Trap Capillary Column Gas Chromatography with Photoionization and Electrolytic Conductivity Detectors in Series; Method 8240, Gas Chromatography/Mass Spectrometry for Volatile Organics; Method 8260, Gas Chromatography/Mass Spectrometry for Volatile Organics: Capillary Column Technique. | 61.18(c);<br>61.355(c)(2)(iv)  |
| Test Methods for Evaluating Solid Waste, Physical Chemical Methods, EPA Publication SW–846, Third Edition, November 1986, and Revision I, December 1987—Method 7196, Chromium Hexavalent (Colorimetric).   | 63.404   |

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The OMB control numbers for chapter I of title 40 were consolidated into §9.1 at 58 FR 27472, May 10, 1993, and amended at 58 FR 34199, June 23, 1993, and 58 FR 34370, June 25, 1993. Section 9.1 is reprinted below for the convenience of the user.

### PART 9—OMB APPROVALS UNDER THE PAPERWORK REDUCTION ACT

AUTHORITY: 7 U.S.C. 135 et seq., 136–136y; 15 U.S.C. 2001, 2003, 2005, 2006, 2601–2671; 21 U.S.C. 331j, 346a, 348; 31 U.S.C. 9701; 33 U.S.C. 1251 et seq., 1311, 1313d, 1314, 1318, 1321, 1326, 1330, 1342, 1344, 1345 (d) and (e), 1361; E.O. 11735, 38 FR 21243, 3 CFR, 1971–1975 Comp. p. 973; 42 U.S.C. 241, 242b, 243, 246, 300f, 300g, 300g–1, 300g–2, 300g–3, 300g–4, 300g–5, 300g–6, 300j–1, 300j–2, 300j–3, 300j–4, 300j–9, 1857 et seq., 6901–6992k, 7401–7671q, 7542, 9601–9657, 11023, 11048.

#### §9.1 OMB approvals under the Paperwork Reduction Act.

This part consolidates the display of control numbers assigned to collections of information in certain EPA regulations by the Office of Management and Budget (OMB) under the Paperwork Reduction Act (PRA). This part fulfills the requirements of section 3507(f) of the PRA.

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| 721.642         | 2070-0012       | 721.1925        | 2070-0012       |
| 721.650         | 2070-0038       | 721.1950        | 2070-0012       |
| 721.700         | 2070-0012       | 721.2025        | 2070-0012       |
| 721.715         | 2070-0012       | 721.2050        | 2070-0012       |
| 721.750         | 2070-0012       | 721.2075        | 2070-0012       |
| 721.757         | 2070-0012       | 721.2084        | 2070-0038       |
| 721.775         | 2070-0012       | 721.2085        | 2070-0012       |
| 721.805         | 2070-0012       | 721.2086        | 2070-0012       |
| 721.825         | 2070-0012       | 721.2088        | 2070-0012       |
| 721.840         | 2070-0012       | 721.2089        | 2070-0012       |
| 721.875         | 2070-0012       | 721.2092        | 2070-0038       |
| 721.925         | 2070-0012       | 721.2120        | 2070-0012       |
| 721.950         | 2070-0012       | 721.2140        | 2070-0012       |
| 721.982         | 2070-0012       | 721.2170        | 2070-0012       |
| 721.1000        | 2070-0012       | 721.2175        | 2070-0012       |
| 721.1025        | 2070-0038       | 721.2250        | 2070-0012       |
| 721.1050        | 2070-0012       | 721.2260        | 2070-0012       |
| 721.1068        | 2070-0012       | 721.2270        | 2070-0012       |
| 721.1075        | 2070-0012       | 721.2275        | 2070-0012       |
| 721.1120        | 2070-0012       | 721.2287        | 2070-0038       |
| 721.1150        | 2070-0012       | 721.2340        | 2070-0012       |
| 721.1175        | 2070-0012       | 721.2355        | 2070-0038       |
| 721.1187        | 2070-0012       | 721.2380        | 2070-0012       |
| 721.1193        | 2070-0012       | 721.2410        | 2070-0012       |
| 721.1210        | 2070-0012       | 721.2420        | 2070-0012       |
| 721.1225        | 2070-0012       | 721.2475        | 2070-0012       |
| 721.1240        | 2070-0012       | 721.2520        | 2070-0012       |
| 721.1300        | 2070-0012       | 721.2540        | 2070-0012       |
| 721.1325        | 2070-0012       | 721.2560        | 2070-0012       |
| 721.1350        | 2070-0012       | 721.2565        | 2070-0012       |
| 721.1372        | 2070-0012       | 721.2575        | 2070-0012       |
| 721.1375        | 2070-0012       | 721.2600        | 2070-0038       |
| 721.1425        | 2070-0038       | 721.2625        | 2070-0012       |
| 721.1430        | 2070-0038       | 721.2650        | 2070-0012       |
| 721.1435        | 2070-0038       | 721.2675        | 2070-0012       |
| 721.1440        | 2070-0038       | 721.2725        | 2070-0038       |
| 721.1450        | 2070-0012       | 721.2750        | 2070-0012       |
| 721.1500        | 2070-0012       | 721.2800        | 2070-0038       |
| 721.1525        | 2070-0012       | 721.2815        | 2070-0012       |
| 721.1550        | 2070-0012       | 721.2825        | 2070-0012       |
| 721.1555        | 2070-0012       | 721.2840        | 2070-0012       |
| 721.1568        | 2070-0012       | 721.2860        | 2070-0012       |
| 721.1575        | 2070-0012       | 721.2880        | 2070-0012       |
| 721.1612        | 2070-0012       | 721.2900        | 2070-0012       |
| 721.1625        | 2070-0012       | 721.2920        | 2070-0012       |

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| 721.2930        | 2070-0012       | 721.4200        | 2070-0012       |
| 721.2940        | 2070-0012       | 721.4215        | 2070-0012       |
| 721.2950        | 2070-0012       | 721.4220        | 2070-0012       |
| 721.2980        | 2070-0012       | 721.4240        | 2070-0012       |
| 721.3000        | 2070-0012       | 721.4250        | 2070-0012       |
| 721.3020        | 2070-0012       | 721.4255        | 2070-0012       |
| 721.3028        | 2070-0012       | 721.4260        | 2070-0012       |
| 721.3034        | 2070-0012       | 721.4270        | 2070-0012       |
| 721.3040        | 2070-0012       | 721.4280        | 2070-0012       |
| 721.3060        | 2070-0012       | 721.4300        | 2070-0012       |
| 721.3080        | 2070-0012       | 721.4320        | 2070-0012       |
| 721.3100        | 2070-0012       | 721.4340        | 2070-0012       |
| 721.3120        | 2070-0012       | 721.4360        | 2070-0038       |
| 721.3140        | 2070-0012       | 721.4380        | 2070-0012       |
| 721.3152        | 2070-0012       | 721.4390        | 2070-0012       |
| 721.3160        | 2070-0038       | 721.4400        | 2070-0012       |
| 721.3180        | 2070-0012       | 721.4420        | 2070-0012       |
| 721.3200        | 2070-0012       | 721.4460        | 2070-0012       |
| 721.3220        | 2070-0038       | 721.4463        | 2070-0012       |
| 721.3248        | 2070-0012       | 721.4466        | 2070-0012       |
| 721.3260        | 2070-0012       | 721.4470        | 2070-0012       |
| 721.3320        | 2070-0012       | 721.4473        | 2070-0012       |
| 721.3340        | 2070-0012       | 721.4480        | 2070-0012       |
| 721.3350        | 2070-0038       | 721.4490        | 2070-0012       |
| 721.3360        | 2070-0012       | 721.4500        | 2070-0012       |
| 721.3364        | 2070-0012       | 721.4520        | 2070-0012       |
| 721.3374        | 2070-0012       | 721.4550        | 2070-0012       |
| 721.3380        | 2070-0012       | 721.4568        | 2070-0012       |
| 721.3390        | 2070-0012       | 721.4585        | 2070-0012       |
| 721.3420        | 2070-0012       | 721.4590        | 2070-0012       |
| 721.3430        | 2070-0038       | 721.4594        | 2070-0012       |
| 721.3435        | 2070-0012       | 721.4600        | 2070-0012       |
| 721.3437        | 2070-0012       | 721.4620        | 2070-0012       |
| 721.3440        | 2070-0012       | 721.4640        | 2070-0012       |
| 721.3460        | 2070-0012       | 721.4660        | 2070-0012       |
| 721.3480        | 2070-0012       | 721.4680        | 2070-0012       |
| 721.3486        | 2070-0012       | 721.4700        | 2070-0012       |
| 721.3500        | 2070-0012       | 721.4720        | 2070-0012       |
| 721.3520        | 2070-0012       | 721.4740        | 2070-0038       |
| 721.3560        | 2070-0012       | 721.4780        | 2070-0012       |
| 721.3620        | 2070-0012       | 721.4790        | 2070-0012       |
| 721.3625        | 2070-0012       | 721.4794        | 2070-0012       |
| 721.3627        | 2070-0012       | 721.4800        | 2070-0012       |
| 721.3629        | 2070-0012       | 721.4820        | 2070-0012       |
| 721.3640        | 2070-0012       | 721.4840        | 2070-0012       |
| 721.3680        | 2070-0012       | 721.4880        | 2070-0012       |
| 721.3700        | 2070-0012       | 721.4925        | 2070-0038       |
| 721.3720        | 2070-0012       | 721.5050        | 2070-0012       |
| 721.3740        | 2070-0012       | 721.5075        | 2070-0012       |
| 721.3760        | 2070-0012       | 721.5175        | 2070-0038       |
| 721.3764        | 2070-0012       | 721.5192        | 2070-0012       |
| 721.3780        | 2070-0012       | 721.5200        | 2070-0012       |
| 721.3790        | 2070-0012       | 721.5225        | 2070-0012       |
| 721.3800        | 2070-0012       | 721.5250        | 2070-0012       |
| 721.3815        | 2070-0012       | 721.5275        | 2070-0012       |
| 721.3840        | 2070-0012       | 721.5278        | 2070-0012       |
| 721.3860        | 2070-0012       | 721.5282        | 2070-0012       |
| 721.3870        | 2070-0012       | 721.5285        | 2070-0012       |
| 721.3880        | 2070-0012       | 721.5300        | 2070-0012       |
| 721.3900        | 2070-0012       | 721.5310        | 2070-0012       |
| 721.4000        | 2070-0012       | 721.5325        | 2070-0012       |
| 721.4020        | 2070-0012       | 721.5330        | 2070-0012       |
| 721.4040        | 2070-0012       | 721.5350        | 2070-0012       |
| 721.4060        | 2070-0012       | 721.5375        | 2070-0012       |
| 721.4080        | 2070-0038       | 721.5385        | 2070-0012       |
| 721.4100        | 2070-0012       | 721.5400        | 2070-0012       |
| 721.4110        | 2070-0012       | 721.5425        | 2070-0012       |
| 721.4128        | 2070-0012       | 721.5450        | 2070-0012       |
| 721.4133        | 2070-0012       | 721.5475        | 2070-0012       |
| 721.4140        | 2070-0038       | 721.5500        | 2070-0012       |
| 721.4155        | 2070-0038       | 721.5525        | 2070-0012       |
| 721.4160        | 2070-0038       | 721.5540        | 2070-0012       |
| 721.4180        | 2070-0038       | 721.5550        | 2070-0012       |

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| 721.5575        | 2070-0012       | 721.7160        | 2070-0012       |
| 721.5600        | 2070-0038       | 721.7180        | 2070-0012       |
| 721.5700        | 2070-0012       | 721.7200        | 2070-0012       |
| 721.5705        | 2070-0012       | 721.7210        | 2070-0012       |
| 721.5710        | 2070-0038       | 721.7220        | 2070-0012       |
| 721.5740        | 2070-0012       | 721.7240        | 2070-0012       |
| 721.5760        | 2070-0012       | 721.7260        | 2070-0012       |
| 721.5763        | 2070-0012       | 721.7280        | 2070-0012       |
| 721.5769        | 2070-0012       | 721.7300        | 2070-0012       |
| 721.5780        | 2070-0012       | 721.7320        | 2070-0012       |
| 721.5800        | 2070-0012       | 721.7340        | 2070-0012       |
| 721.5820        | 2070-0012       | 721.7360        | 2070-0012       |
| 721.5840        | 2070-0012       | 721.7370        | 2070-0012       |
| 721.5860        | 2070-0012       | 721.7400        | 2070-0012       |
| 721.5867        | 2070-0012       | 721.7420        | 2070-0012       |
| 721.5880        | 2070-0012       | 721.7440        | 2070-0012       |
| 721.5900        | 2070-0012       | 721.7450        | 2070-0012       |
| 721.5910        | 2070-0012       | 721.7460        | 2070-0012       |
| 721.5915        | 2070-0012       | 721.7480        | 2070-0012       |
| 721.5920        | 2070-0012       | 721.7500        | 2070-0012       |
| 721.5960        | 2070-0012       | 721.7540        | 2070-0012       |
| 721.5970        | 2070-0012       | 721.7560        | 2070-0012       |
| 721.5980        | 2070-0012       | 721.7580        | 2070-0012       |
| 721.5990        | 2070-0012       | 721.7600        | 2070-0012       |
| 721.6000        | 2070-0038       | 721.7620        | 2070-0012       |
| 721.6020        | 2070-0012       | 721.7655        | 2070-0012       |
| 721.6060        | 2070-0012       | 721.7660        | 2070-0012       |
| 721.6070        | 2070-0012       | 721.7680        | 2070-0012       |
| 721.6080        | 2070-0012       | 721.7780        | 2070-0012       |
| 721.6085        | 2070-0012       | 721.7710        | 2070-0012       |
| 721.6090        | 2070-0012       | 721.7720        | 2070-0012       |
| 721.6100        | 2070-0012       | 721.7700        | 2070-0012       |
| 721.6110        | 2070-0012       | 721.7740        | 2070-0012       |
| 721.6120        | 2070-0012       | 721.7760        | 2070-0012       |
| 721.6140        | 2070-0012       | 721.7770        | 2070-0012       |
| 721.6160        | 2070-0012       | 721.8075        | 2070-0012       |
| 721.6180        | 2070-0012       | 721.8082        | 2070-0012       |
| 721.6186        | 2070-0012       | 721.8090        | 2070-0012       |
| 721.6200        | 2070-0012       | 721.8100        | 2070-0012       |
| 721.6220        | 2070-0012       | 721.8155        | 2070-0012       |
| 721.6440        | 2070-0012       | 721.8160        | 2070-0012       |
| 721.6470        | 2070-0012       | 721.8170        | 2070-0012       |
| 721.6500        | 2070-0012       | 721.8175        | 2070-0012       |
| 721.6520        | 2070-0012       | 721.8225        | 2070-0012       |
| 721.6540        | 2070-0012       | 721.8250        | 2070-0012       |
| 721.6560        | 2070-0012       | 721.8265        | 2070-0012       |
| 721.6580        | 2070-0012       | 721.8275        | 2070-0012       |
| 721.6600        | 2070-0012       | 721.8290        | 2070-0012       |
| 721.6620        | 2070-0012       | 721.8300        | 2070-0012       |
| 721.6625        | 2070-0012       | 721.8325        | 2070-0012       |
| 721.6640        | 2070-0012       | 721.8335        | 2070-0012       |
| 721.6660        | 2070-0012       | 721.8350        | 2070-0012       |
| 721.6680        | 2070-0012       | 721.8375        | 2070-0012       |
| 721.6700        | 2070-0012       | 721.8400        | 2070-0012       |
| 721.6720        | 2070-0012       | 721.8425        | 2070-0012       |
| 721.6740        | 2070-0012       | 721.8450        | 2070-0012       |
| 721.6760        | 2070-0012       | 721.8475        | 2070-0012       |
| 721.6780        | 2070-0012       | 721.8500        | 2070-0012       |
| 721.6820        | 2070-0012       | 721.8525        | 2070-0012       |
| 721.6840        | 2070-0012       | 721.8550        | 2070-0012       |
| 721.6880        | 2070-0012       | 721.8575        | 2070-0012       |
| 721.6900        | 2070-0012       | 721.8600        | 2070-0012       |
| 721.6920        | 2070-0012       | 721.8650        | 2070-0012       |
| 721.6940        | 2070-0012       | 721.8654        | 2070-0012       |
| 721.6960        | 2070-0012       | 721.8670        | 2070-0012       |
| 721.6980        | 2070-0012       | 721.8675        | 2070-0012       |
| 721.7000        | 2070-0012       | 721.8700        | 2070-0012       |
| 721.7020        | 2070-0012       | 721.8750        | 2070-0012       |
| 721.7040        | 2070-0012       | 721.8775        | 2070-0012       |
| 721.7046        | 2070-0012       | 721.8825        | 2070-0012       |
| 721.7080        | 2070-0012       | 721.8850        | 2070-0012       |
| 721.7100        | 2070-0012       | 721.8875        | 2070-0012       |
| 721.7140        | 2070-0012       | 721.8900        | 2070-0012       |

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| 721.8965   | 2070-0012       |
| 721.9000   | 2070-0038       |
| 721.9075   | 2070-0012       |
| 721.9100   | 2070-0012       |
| 721.9220   | 2070-0012       |
| 721.9240   | 2070-0012       |
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| 721.9280   | 2070-0012       |
| 721.9300   | 2070-0012       |
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| 721.9400   | 2070-0012       |
| 721.9420   | 2070-0012       |
| 721.9460   | 2070-0012       |
| 721.9470   | 2070-0038       |
| 721.9480   | 2070-0012       |
| 721.9500   | 2070-0012       |
| 721.9505   | 2070-0012       |
| 721.9510   | 2070-0012       |
| 721.9520   | 2070-0012       |
| 721.9525   | 2070-0012       |
| 721.9526   | 2070-0012       |
| 721.9527   | 2070-0012       |
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| 721.9540   | 2070-0012       |
| 721.9550   | 2070-0012       |
| 721.9570   | 2070-0012       |
| 721.9580   | 2070-0038       |
| 721.9620   | 2070-0012       |
| 721.9630   | 2070-0012       |
| 721.9650   | 2070-0012       |
| 721.9656   | 2070-0012       |
| 721.9658   | 2070-0012       |
| 721.9660   | 2070-0038       |
| 721.9665   | 2070-0012       |
| 721.9675   | 2070-0012       |
| 721.9700   | 2070-0012       |
| 721.9720   | 2070-0012       |
| 721.9730   | 2070-0012       |
| 721.9740   | 2070-0012       |
| 721.9750   | 2070-0012       |
| 721.9780   | 2070-0012       |
| 721.9800   | 2070-0012       |
| 721.9820   | 2070-0012       |
| 721.9850   | 2070-0012       |
| 721.9870   | 2070-0012       |
| 721.9892   | 2070-0012       |
| 721.9900   | 2070-0012       |
| 721.9920   | 2070-0012       |
| 721.9925   | 2070-0012       |
| 721.9930   | 2070-0038       |
| 721.9940   | 2070-0012       |
| 721.9957   | 2070-0038       |
| 721.9975   | 2070-0012       |
| <b>Premanufacture Notification Exemptions</b>                                  |                 |
| 723.50   | 2070-0012       |
| 723.175  | 2070-0012       |
| 723.250(m)(1)  | 2070-0012       |
| <b>Lead-Based Paint Poisoning Prevention in Certain Residential Structures</b> |                 |
| part 745, subpart F  | 2070-0151       |
| <b>Water Treatment Chemicals</b>   |                 |
| part 749, subpart D  | 2060-0193       |
| 749.68   | 2060-0193       |

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| <b>Polychlorinated Biphenyls (PCBs) Manufacturing, Processing, Distribution in Commerce, and Use Prohibitions</b> |                                  |
| 761.20  | 2070-0008 & 2070-0021            |
| 761.30  | 2070-0003, 2070-0008 & 2070-0021 |
| 761.60  | 2070-0011                        |
| 761.65  | 2070-0112                        |
| 761.70  | 2070-0011                        |
| 761.75  | 2070-0011                        |
| 761.80  | 2070-0021                        |
| 761.93(a)(1)(iii)   | 2070-0149                        |
| 761.93(b)   | 2070-0149                        |
| 761.125   | 2070-0112                        |
| 761.180   | 2070-0112                        |
| 761.185   | 2070-0008                        |
| 761.187   | 2070-0008                        |
| 761.193   | 2070-0008                        |
| 761.202   | 2070-0112                        |
| 761.205   | 2070-0112                        |
| 761.207   | 2070-0112                        |
| 761.207(a)  | 2050-0039                        |
| 761.208   | 2070-0112                        |
| 761.209   | 2070-0112                        |
| 761.210   | 2070-0112                        |
| 761.211   | 2070-0112                        |
| 761.215   | 2070-0112                        |
| 761.218   | 2070-0112                        |
| <b>Asbestos</b>   |                                  |
| part 763, subpart E   | 2070-0091                        |
| part 763, subpart G   | 2070-0072                        |
| part 763, subpart I   | 2070-0082                        |
| <b>Dibenzo-para-dioxin/Dibenzofurans</b>  |                                  |
| 766.35(b)(1)  | 2070-0054                        |
| 766.35(b)(2)  | 2070-0054                        |
| 766.35(b)(3)  | 2070-0017                        |
| 766.35(b)(4)(iii)   | 2070-0054                        |
| 766.35(c)(1)(i)   | 2070-0054                        |
| 766.35(c)(1)(ii)  | 2070-0054                        |
| 766.35(c)(1)(iii)   | 2070-0017                        |
| 766.35(d) Form  | 2070-0017                        |
| 766.38  | 2070-0054                        |
| <b>Procedures Governing Testing Consent Agreements and Test Rules</b>   |                                  |
| 790.5   | 2070-0033                        |
| 790.42  | 2070-0033                        |
| 790.45  | 2070-0033                        |
| 790.50  | 2070-0033                        |
| 790.55  | 2070-0033                        |
| 790.60  | 2070-0033                        |
| 790.62  | 2070-0033                        |
| 790.68  | 2070-0033                        |
| 790.80  | 2070-0033                        |
| 790.82  | 2070-0033                        |
| 790.85  | 2070-0033                        |
| 790.99  | 2070-0033                        |
| <b>Good Laboratory Practice Standards</b>   |                                  |
| part 792  | 2010-0019,                       |

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|   | 2070-0004,<br>2070-0017,<br>2070-0033,<br>2070-0054 &<br>2070-0067 | 799.5075 .....   | 2070-0033       |
| <b>Provisional Test Guidelines</b>  |  | <sup>1</sup> The ICRs referenced in this section of the Table encompass the applicable general provisions contained in 40 CFR part 60, subpart A, which are not independent information collection requirements.<br><sup>2</sup> The ICRs referenced in this section of the Table encompass the applicable general provisions contained in 40 CFR part 61, subpart A, which are not independent information collection requirements.<br><sup>3</sup> The ICRs referenced in this section of the Table encompass the applicable general provisions contained in 40 CFR part 63, subpart A, which are not independent information collection requirements. |                 |
| 795.45 .....  | 2070-0067  | [58 FR 27472, May 10, 1993]  |                 |
| 795.232 .....   | 2070-0033  | EDITORIAL NOTE: For Federal Register citations affecting §9.1 see the List of CFR Sections Affected in the Finding Aids section of this volume.<br><br>EFFECTIVE DATE NOTES: 1. At 61 FR 16309, Apr. 12, 1996, in §9.1 table, the heading "Public Information" and its entry for part 2, subpart B were added, effective July 11, 1996.<br><br>2. At 61 FR 33206, June 26, 1996, in §9.1 table, the entry for 170.112 was removed and the entry for part 170 was added, effective Aug. 26, 1996.<br><br>3. At 61 FR 34228, July 1, 1996, in §9.1 table, entries 71.5, 71.6(a), (c), (d), (g), 71.7, and 71.9(e)-(j) were added, effective July 31, 1996. |                 |
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| 63.420—63.429 (Subpart R) Table 1 amended   | 7723          |
| 63.541 (c) added  | 27788         |
| 63.640 (h)(5)(iii) corrected  | 7051          |
| (b), (d), (h)(4), (l)(3)(iv), (m)(2) and (n)(4) revised; (f)(5) introductory text and (h)(5) introductory text amended; (h)(3) and (l)(4) added | 29878         |
| 63.641 Amended  | 29879         |
| 63.642 (g) corrected  | 7051          |
| (e) and (g) revised   | 29879         |
| 63.644 (d) amended  | 29880         |
| 63.645 (a) and (h)(2) revised; (i) added  | 29880         |
| 63.646 (a), (d) introductory text and (9) revised; (d)(10) added  | 29880         |
| 63.648 (c)(9) and (10) amended  | 29880         |
| 63.650 (a) revised  | 29880         |
| 63.651 (a) revised; (d) added   | 29880         |
| 63.652 (j)(2)(ii) corrected   | 7051          |
| (h)(1) introductory text amended  | 29881         |
| Corrected   | 33799         |
| 63.653 (a)(4) revised   | 29881         |
| 63.654 (d) introductory text, (3), (g)(8)(ii)(B) and (h)(1) revised; (d)(4), (5) and (6) added; (g)(6)(iii) amended                             | 29881         |
| 63.640—63.654 (Subpart CC) Appendix amended   | 29881, 29882  |
| 63.680—63.698 (Subpart DD) Added  | 34158         |
| 63.753 (a)(1) correctly revised   | 4903          |
| 63.784 (a) revised; eff. 8-19-96  | 30816         |
| 63.787 (b)(1)(ii) and (4) revised; (b)(2) removed; eff. 8-19-96   | 30816         |
| 63.820—63.831 (Subpart KK) Added  | 27140         |

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| 63.900—63.907 (Subpart OO) Added  | 34184  |
| 63.920—63.928 (Subpart PP) Added  | 34186  |
| 63.940—63.948 (Subpart QQ) Added  | 34190  |
| 63.960—63.966 (Subpart RR) Added  | 34193  |
| 63.1040—63.1049 (Subpart VV) Added  | 34195  |
| 63 Appendix D added   | 34200  |
| 68 Authority citation revised   | 31717  |
| 68.2 Added  | 31731  |
| 68.3 Amended; eff. 8-19-96  | 31717  |
| 68.10 Added; eff. 8-19-96   | 31717  |
| 68.12 Added; eff. 8-19-96   | 31718  |
| 68.15 Added; eff. 8-19-96   | 31718  |
| 68.20—68.42 (Subpart B) Added; eff. 8-19-96                                       | 31718  |
| 68.48—68.60 (Subpart C) Added; eff. 8-19-96                                       | 31721  |
| 68.65—68.87 (Subpart D) Added; eff. 8-19-96                                       | 31722  |
| 68.90—68.95 (Subpart E) Added; eff. 8-19-96                                       | 31725  |
| 68.100—68.130 (Subpart C) Redesignated as 68.100—68.130 (Subpart F); eff. 8-19-96 | 31717  |
| 68.150—68.190 (Subpart G) Added; eff. 8-19-96                                     | 31726  |
| 68.200—68.220 (Subpart H) Added; eff. 8-19-96                                     | 31728  |
| 68 Appendix A added; eff. 8-19-96   | 31729  |
| 70.4 (d)(3) introductory text and (ii) revised; eff. 7-22-96                      | 31448  |
| 70 Appendix A amended   | 2722, 2939, 3832, 4220, 4224, 5707, 7076, 8876, 11739, 13103, 16065, 18088, 18968, 24461, 24720, 31443 |
| Appendix A corrected  | 7073   |
| Appendix A amended; eff. 7-5-96   | 20155  |
| Appendix A amended; eff. 7-25-96  | 32699  |
| 71.1—71.12 (Subpart A) Added; eff. 7-31-96  | 34229  |

